



Department of Energy

Richland Operations Office
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Richland, Washington 99352

00-IMD-003

Dr. J. T. A. Roberts, Interim Director
Pacific Northwest National Laboratory
Richland, Washington 99352

Dear Dr. Roberts:

CONTRACT NO. DE-AC06-76RL01830 – FY 1999 YEAR END EVALUATION OF BATTELLE FOR
MANAGEMENT AND OPERATION OF THE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)

Enclosed is the U. S. Department of Energy (DOE) FY 1999 Year End Evaluation Report of Battelle's management and operation of PNNL. The Department's overall rating of Battelle's performance for FY 1999 is Outstanding. This rating is based on the Critical Outcome matrices identified for FY 1999, which earned a rating of outstanding for each of the four Critical Outcomes.

DOE is very pleased with Battelle's overall performance. I believe that the effective partnership between DOE and Battelle, along with the results oriented, performance-based concepts in place is key to the success of the third mission element of "Putting DOE Assets to Work for the Future," which I have recently unveiled for Hanford. One area of recent concern in this area is the number of changes in senior management within the Laboratory, to include the Laboratory Director. It is important that we work very close to ensure the strong partnership and successful programs we have worked so hard to deploy throughout the Laboratory do not suffer. As of the issuance of this report, a new Laboratory Director had not been named. A second area of concern lies within the Equal Employment Opportunity Diversity program. Although Battelle's continued efforts in this area are to be commended, the Hanford Site Performance Report for FY 1999 statistics show that there is still significant room for improvement.

This was the fourth year that the performance evaluation was centered around attainment of the critical outcomes formed in partnership between Battelle and DOE with the Contractor meeting or exceeding expectations in most areas.

- The outstanding performance within each of the objectives which made up the Scientific and Technological Excellence Critical Outcome, confirmed the Contractor's continuing success in conducting high quality, externally recognized, scientific research and development programs. Notable achievements during FY 1999 included the award of six R&D 100 and two FLC awards, excellent to outstanding peer reviews and customer feedback, and the

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continued recognition of Contractor staff for their scientific and engineering excellence in terms of awards, invited

talks, and participation on scientific committees. The Contractor was also very successful in the deployment of technology, especially in the deployment of technologies at Hanford, which was a weakness identified in the FY 1998 report and the global deployment of non-proliferation technologies. Other successes were noted in the support of the national Tank Focus Area, and the Hanford Tanks Privatization efforts. For the second year in a row the DOE HQ Office of Science awarded the Contractor an overall Outstanding rating. The DOE HQ Office of Fossil Energy recognized Battelle's management of the Solid Oxide Fuel Cell research program as aggressive and proactive resulting in substantial research activity.

Although the Contractor received an outstanding rating for the Scientific and Technological Excellence critical outcome, there was a serious incident which could have had major impact to PNNL's scientific credibility. During FY 1999, a long term violation of laboratory scientific procedures as well as client expectation was discovered at the Marine Sciences Laboratory (MSL). In late June, it was discovered that some staff at the MSL had been recording results of water quality measurements when in fact not all of the measurements were actually taken. Battelle's actions upon discovering the incident were appropriate, however, it should still be noted as a very serious issue.

- Overall, the Contractor continues to provide for the safety of the worker, public and environment in an outstanding manner which agrees with Battelle's self-evaluation that performance regarding the Operational Excellence critical outcome during FY 1999 has been Outstanding. Notable improvements were seen in most of the occupational safety and health, radiological control, waste management, and environmental protection lagging indicators measured during FY 1999. However, a couple, most notably radiation contaminations, indicate the need for further attention. Although some areas for continued improvement were identified, measures of worker involvement, knowledge, and culture relative to ES&H, R&D equipment utilization, and facilities and services integration, all indicated the Contractor is meeting or exceeding expectation.
- The Leadership and Management Critical Outcome measured the Contractor's ability to provide leaders/managers and produce efficient management systems that effectively support employees in the performance of their mission responsibility. Battelle's outstanding performance in two of the three objectives within this outcome illustrates their continued success in understanding staff and management needs, and emphasis on effectively utilizing self-assessment to monitor and drive improvements. One area of continued concern is the Research-to-Support Staff Labor Ratio, which failed to meet expectations for the second year in a row. Contractor management attention to this area is required to ensure the root cause is identified and appropriate actions are taken during FY 2000.

- Once again Battelle's performance in the area of Community Relations continues to be outstanding. Of note was the Contractor's continued support in launching or expanding new technology-based businesses in the area and their impact on science, mathematics and technology education. Furthermore, Battelle launched a new volunteerism program, "Team Battelle," engaging hundreds of Contractor staff in a number of community programs.

The Department is very pleased with the continued strides noted during this last year in the quality and relevance of science, operations, leadership and management, and community relations. Through our continued partnership, and strengthening of our performance-based, results oriented processes, we look forward to another successful year.

If you have any questions, please contact me, or your staff may contact Julie K. Erickson, Acting Assistant Manager for Science and Technology, on (509) 372-4005.

Sincerely,

/s/
Keith A. Klein
Manager

IMD:TLD

Enclosure:
FY 1999 Year End
Evaluation of Battelle

cc w/encl:
M. A. Krebs, SC-1

Richland Operations Office

FY 1999

Performance Evaluation of Battelle Memorial Institute for the Management and Operation of the Pacific Northwest National Laboratory

December 1999

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I OVERALL SUMMARY/RATING

The basis for the evaluation of Battelle Memorial Institute's management and operations of the Pacific Northwest National Laboratory during FY 1999 centered around the measures found within four Critical Outcomes. Although the Contractors self-evaluation of the Critical Outcomes and their associated objectives and indicators were the primary means for determining Battelle's performance other means such as operational awareness (daily oversight) activities, other DOE RL reviews, or other outside agency reviews (OIG, GAO, DCAA, etc.) conducted throughout the year were utilized as appropriate. In addition, a two-week field review was conducted from November 8 – 19, 1999, during which review teams followed up on (verified & validated) activities and issues associated with the outcomes and other areas of concern. The FY 1999 Critical Outcomes included Scientific & Technology Excellence, Operational Excellence, Leadership and Management and Community Relations.

Battelle's performance generally exceeded DOE RL expectations throughout FY 1999, and although there were several areas for improvement identified these were more than offset by the identified strengths throughout the organization. Based on this evaluation the overall performance score was determined to be 4.7 value points, which corresponds to an adjective rating of Outstanding. The ratings for each of the outcomes, as well as the overall rating are indicated within tables 1A and 1B below.

Critical Outcome	Adjectival Rating	Score	Weight	Weighted Score
Scientific and Technological Excellence	Outstanding	4.8	55%	2.6
Operational Excellence	Outstanding	4.5	20%	0.9
Leadership & Management	Outstanding	4.5	20%	0.9
Community Relations	Outstanding	5.0	5%	0.3
			Total	4.7

Table 1A. FY 1999 Contractor Evaluation Score Calculation

Total Score	5.0 - 4.5	4.4 - 3.5	3.4 - 2.5	2.4 - 1.5	<1.5
Final Rating	Outstanding	Excellent	Good	Marginal	Unsatisfactory

Table 1B. Overall Contractor Adjectival Rating

DOE RL's evaluation of each of the Critical Outcomes generally agreed with that of the Battelle's FY 1999 Annual Self-Evaluation Report for the Pacific Northwest National Laboratory. Section II of this report provides the evaluation with respect to each of the Critical Outcomes and there respective objectives and indicators.

Section III, "Self-Assessment Reviews," provides information regarding 1) Business Management Oversight Process (BMOP) review and reviews of both 2) Program Technical and 3) ES&H/Operations, self-assessment activities.

The review of Battelle's business management functions, coordinated by the DOE RL Contract Finance and Review Division, for the Office of Assistant Manager for Science and Technology, concluded that overall they are exceeding DOE RL expectations earning an overall rating of Excellent. Six functional areas participated in the two-week field review conducted November 8 – 19, 1999, while the remaining

areas found that it was not necessary to participate in the field review. The full Business Management Oversight Review Report, as provided to AMT, may be found within Attachment 1 of this report.

The DOE RL Science and Technical Programs Division performed a validation assessment of Battelle's Environmental Technology Division, National Security Division, Energy Technology Division, and the Environmental and Health Sciences Division, self-assessments. The Science and Technology Operations Division performed a validation assessment of Battelle's Environmental, Safety and Health, and Operations. Battelle's performance generally exceeded DOE RL expectations, and although there were several areas for improvement identified these were offset by the identified strengths within the self-assessment program.

Section IV, "Other Notable Observations," of this report provides information regarding DOE Headquarters programs/projects, and other DOE RL activities. It should be noted that both this section and Section III, "Self-Assessment Reviews," are provided for information purposes only and do not effect the overall rating. Even though they do not effect the evaluation rating, DOE RL expects the Contractor to take special note of the information provided within these reviews and to take appropriate actions to insure continuous improvement in all aspects of the management and operations of the Laboratory.

II CRITICAL OUTCOMES

1.0 SCIENTIFIC AND TECHNOLOGICAL EXCELLENCE (55%)

This Critical Outcome measures Contractor success in conducting high quality, externally recognized, scientific research and development programs. The outstanding performance within each of the four objectives of this outcome earned the Contractor an overall rating of 4.8, corresponding to an **Outstanding**. Notable achievements during FY 1999 included the award of six R&D 100 and two FLC awards, excellent to outstanding peer reviews and customer feedback, and the continued recognition of Contractor staff for their scientific and engineering excellence in terms of awards, invited talks, and participation on scientific committees. The Contractor was also very successful in the deployment of technology exceeding expectations. The FY 1998 review identified a weakness in the lack of technology deployments at Hanford. During FY 1999 five of the 11 technologies deployed were at Hanford. This was a very notable achievement and we look forward to continued success in this area. Other successes were noted in the support of the national Tank Focus Area and the Hanford Tanks Privatization efforts, and for the second year in a row the DOE HQ Office of Science awarded the Contractor an overall Outstanding rating. Tables 2A through 2F show how the outcome objective ratings were determined as well as the overall outcome rating.

1.1 Objective: Conduct high quality science and technology programs as measured by the following indicators (25%)

In FY 1999 the Contractor received overall outstanding peer reviews; increased over 100% from FY 1998 the number of Level 3 awards, invited talks, and committee service; and earned a total of 8 Federal Laboratory Consortium and R&D 100 awards. They also continued and/or established 94 quality academic/scientific partnerships and received an overall rating of outstanding from the DOE HQ Office of Science for the overall quality of science. This performance resulted in an overall rating of 5.0 for this Objective, which corresponds to **Outstanding**.

1.1.1 Results of external peer review of relevance and excellence, including Divisional reviews

The peer review process is perhaps the single most important measure in determining the quality and performance of the laboratory's science, engineering and technology programs.

The laboratory provided the DOE RL point-of-contact (POC) a year-end summary of the primary review components of the Division Review Committees (DRCs), the Laboratory Review Committee (LRC), and the internal peer review of communications sent by laboratory personnel. The results of the OBES-sponsored and staffed review of June 10-11, 1999, were not communicated to DOE RL or the laboratory at the time this rating was assigned (December 1999), however, indications are that the rating will be "excellent" overall, and "outstanding" in some areas. In addition the laboratory invited the DOE RL POC to select peer reviews, and provided written follow-up information on select other reviews.

Based upon these documents and activities, DOE RL assigns a rating of Outstanding for this indicator corresponding to an effectiveness score of 40 in support of Objective 1.1. This rating agrees with the Battelle self-evaluation.

1.1.2 Recognition by the external scientific and technical community

This indicator's purpose is to provide a measure of the recognition in the state, regional, national and international communities for awards, invited talks, and committee service by laboratory staff.

The total number of Level 3 awards, invited talks, and committee service cited by the Laboratory increased over 100% for FY 1999 (196) compared to FY 1998 (92). As of 10/27/99 30 Awards qualified for level 3 ranking: 22 Laboratory staff members received individual national, state, or regional awards, 7 awards were shared and 1 Lab award. This represents a significant and important increase, and is well above the 10% increase target for FY 1999 providing the maximum effectiveness score of 20 available for the indicator.

Special Note: Battelle did an exceptional job of partnering with DOE RL on 1.1.2. The Contractor included the DOE RL point-of-contact (POC) for indicator 1.1.2 in the internal Laboratory sessions that evaluate and rank awards and recognition. By working closely with the DOE RL POC, Battelle fostered a much greater knowledge and appreciation of the Laboratory's outstanding accomplishments and contributions for FY 1999. The partnering is appreciated and valued.

1.1.3 Number of R&D 100 and FLC awards

The indicator is based upon a three-year rolling average of R&D 100 and FLC Awards. The Laboratory won 6 R&D 100 Awards and 2 FLC Awards in FY 1999, down from 7 R&D 100 Awards and 3 FLC Awards for FY 1998. However, the rolling average of 8.3 for FY 1997-1999 is still above the target three-year average of 8.0, and is considered an exceptional result. This performance earns effectiveness score of 10 points in support of Objective 1.1.

1.1.4 Publication Growth

This indicator monitors the change in laboratory publication growth as measured by the databases and research services of the Institute for Scientific Information as compared to the average from the previous three years.

The target publication growth for FY 1999 was 5 %. For the period of FY 1996-1998 the average publications were 509 per year. For FY 1999 there were 606 publications, which corresponds to a publication growth of 19%. This is well above the 5 % target earning 20 effectiveness points in support of Objective 1.1.

1.1.5 Number of quality academic/scientific partnerships

This indicator consists of two parts: 1) The number of quality academic partnerships with Northwest institutions and 2) the number of quality partnerships with other institutions.

1.1.5.1 Academic partnerships:

This sub-indicator measured Battelle's capability in continuing and/or establishing strategic research/education partnerships with colleges, universities, and other academic support organizations that enhance the Laboratory's science/technology mission and are consistent with relevant provisions of the DOE's Strategic Plan. Ninety-four partnerships were established or maintained during FY 1999 exceeding the target of 80 partnerships and earning the Contractor 10 effectiveness points in support of Objective 1.1.

1.1.5.2 Scientific (non-academic) partnerships:

The intent of this indicator was to establish a baseline for scientific (non-academic) partnerships in FY 1999. There was no performance expectation associated with the indicator, and it does not contribute to the score.

During the mid-year review several issues associated with this particular indicator were discussed by the laboratory with DOE RL. Prior to the third quarter the Contractor point-of-contact (POC) for this indicator recommended to DOE RL that this sub-indicator be dropped due to data collection issues. Issues cited by the laboratory were: 1) data collection was complicated as there was no central collection point, 2) there was uncertainty as to which data should be captured (for example, laboratory initiatives such as environmental health require partnerships, but they are kept within the reporting context of that initiative. The laboratory also tracks partnerships for the terrestrial carbon sequestration program, and they too are tracked in the context of the initiative. Finally, the laboratory has other types of partnerships (CRADAs, MOUs) that are tracked in another way). By the time internal consensus was reached within the laboratory regarding the indicator, it was too late in the year to drop it.

1.1.6 Results of DOE-SC Evaluation of the quality of science

As in years past the DOE HQ Office of Science has rated the overall quality of science performed by the Laboratory to be Outstanding. This rating was determined by a weighted average of performance evaluations provided by each Office of Science program office, with budget for PNNL from each office as the weighting factor. The rating assigned by each program office was as follows:

- BES – Excellent
- BER – Outstanding
- CTR – Outstanding
- Fusion – Outstanding

See Attachment 2 for the detailed response provided by the Office of Science.

1.2 Objective: Deliver Science and Technology Products Relevant to DOE Missions and National Needs (40%)

This Objective provided an indication of how well the Contractor delivered science and technology products relevant to DOE missions and national needs. As in years past the DOE HQ Office of Science rated the overall relevance of Battelle's work as outstanding while rating their overall programmatic performance for FY 1999 as Excellent. The Contractor continued to provide excellent support to the Tank Focus Area and the Hanford Tanks Privatization efforts, while providing high quality support in addressing Hanford science needs and technical gaps. Furthermore, customer feedback on relevance and excellence in Environmental Quality, National Security, and Energy mission areas were all rated as outstanding. The above performance and other successes as identified within the indicators for this Objective resulted in an overall rating of 4.8, corresponding to an **Outstanding**.

Fundamental Science

1.2.1 Results of DOE-SC evaluation of the relevance of Battelle's work to DOE Missions and Needs

As in years past the DOE HQ Office of Science has rated the overall relevance of Battelle's work to DOE missions and needs to be Outstanding. This rating was determined by a weighted average of performance evaluations provided by each Office of Science program office, with budget for PNNL from each office as the weighting factor. The rating assigned by each program office was as follows:

- BES – Excellent
- BER – Outstanding
- CTR – Outstanding
- Fusion – Outstanding

See Attachment 2 for the detailed response provided by the Office of Science.

1.2.2 The results of DOE-SC evaluation of the Laboratory's programmatic performance

The DOE HQ Office of Science rated the overall Laboratory's programmatic performance for FY 1999 to be Excellent. This rating was determined by a weighted average of performance evaluations provided by each Office of Science program office, with budget for PNNL from each office as the weighting factor. Although a good rating the Office of Science noted that this was the third year in a row that the lowest scores received by the Laboratory were for program management. The rating assigned by each program office was as follows:

- BES – Excellent
- BER – Excellent
- CTR – Outstanding
- Fusion – Outstanding

See Attachment 2 for the detailed response provided by the Office of Science.

Environmental Quality

1.2.3 Effectively lead the technical aspects of the national Tanks Focus Area

The composite of the sub-indicators provides an overall indication that the Contractor continues to effectively lead the technical aspects of the national Tanks Focus Area. The performance (213 total points) of the sub-indicators discussed below earned the Contractor 71 effectiveness points in support of the Objective 1.2.

1.2.3.a Effective definition of technical solutions across the DOE complex

The Battelle Technical Team performance was measured by how well they integrated with the site users, technical advisors, and DOE HQ staff to develop recommendations that were responsive to customer needs. A survey was developed by DOE RL and the Contractor and administered by the DOE RL TFA Program Manager. Respondents to the survey were members of the TFA Management Team representing users from the four major DOE sites and DOE HQ program managers. The survey provided respondents a range from 1 to 10 (worst to best), in meeting customer expectations in three major areas - Program Development, Integrated Multiyear Program Planning & Execution, and Development & Planning of the Technical Responses. The composite score for all questions was an 8.7, which earned 67 effectiveness points in support of indicator 1.2.3. Battelle continues to demonstrate excellent performance in the technical program development, integration, and response process. The users support the process of technical solution derivation. The Contractor Technical team was highly rated in integrating site/field/project operations staff, crosscut programs, and industry/university/international participants as well as in the areas of conflict resolution, fostering user/producer/developer teams, and a variety of other necessary technical roles.

1.2.3.b Adequate technology delivery to solve complex-wide problems

The Tanks Focus Area established 20 key deliverables in the area of technology delivery. Performance was measured by the ratio of completed deliverables to the total number of expected deliverables. Of the original 20, two were removed from the list under the approved baseline control due to user baseline changes or circumstances outside the Technical Team's control leaving a total of 18 key deliverables. Eighteen of these were successfully completed in FY 1999 for a total of 100% completion. This performance earned the Contractor 100 effectiveness points in support of indicator 1.2.3. Throughout the year, the TFA Technical Team performance in this area has been outstanding. The key TFA activities defined as technical solutions were diligently tracked and reported with recommendations made in time to maintain project schedules. Project milestone deliverables, completion criteria, and participants were established for each of the key activities and as a result TFA delivery was regarded as solid, and highly effective.

1.2.3.c Adequate tracking of technical progress to baseline

TFA actively managed the cost and schedule performance of its technical activities through FY 1999. Technical progress as assessed by the Technical Team was one indicator of cost and schedule monitoring performance. Diligent assessment throughout the year identified technical issues that have had cost and schedule impact, and as a result were used to minimize the amount of year-end carryover. Although year-end projections for the TFA carryover figure were at 5%, the HQ reported figure (as of December 1, 1999) was at 10.3 percent. However, the 10.3 percent figure does not include some costed activities. In that the final figures will not be available until after January 1, 2000 and the fact that the worst case scenario would not effect the overall rating for outcome 1.0, the worst case carryover figure of 10.3 percent is being utilized for determining the rating of this sub-indicator. This performance would earn the Contractor 0 effectiveness points in support of indicator 1.2.3. Throughout FY 1999, the Contractor provided all relevant Progress Tracking and Change Request information in partnership with DOE RL for processing in a timely fashion. Change control measures in response to activity change were initiated. As evidenced in the budget allocation for TFA, focus area carryover continues to be a high priority indicator for HQ due to the importance in managing limited funds and accordingly TFA has been rewarded.

1.2.4 Effectively support the Hanford Tanks Privatization Effort

The composite of the sub-indicators provides an overall indication that the Contractor continues to effectively support the Hanford Tanks Privatization effort. The performance (224 total points) of the sub-indicators discussed below earned the Contractor 68 effectiveness points in support of the Objective 1.2.

1.2.4.a Provide leadership support for the successful implementation of the Phase I TWRS privatization through timely and high quality review and evaluation of BNFL, Inc. deliverables.

The survey was developed with the appropriate points of contact and completed. The surveys resulted in very favorable results with an average score of 91.43 on a 100-point scale. This performance earned the Contractor 91 effectiveness points in support of indicator 1.2.4.

- 1.2.4.b Effectively support DOE's decision making by ensuring that key decisions are identified and analyzed, and that appropriate information is provided to DOE decision makers in a timely manner.

The survey indicated that the client was satisfied with the six-month decision support and a little more satisfied with the studies that were performed for Optimization, Management, Incorporation, Selection, LAW, and Entrained. The average score of 82.85 on a 100 point scale. This performance earned the Contractor 83 effectiveness points in support of indicator 1.2.4.

- 1.2.4.c Effectively support DOE in their effort to respond to unanticipated issues and informational requests on the TWRS Privatization Program.

This survey indicated that the clients were very satisfied with the work done in this area with an average score of 85.5 on a 100-point scale. This performance earned the Contractor 50 effectiveness points in support of indicator 1.2.4.

- 1.2.5 Number of innovative technologies and approaches successfully deployed in commercial practice

This year the Laboratory completed 11 technology deployments, which equated to 19 points. This exceeded the performance target of 16 points and earned 60 effectiveness points for the Contractor in support of Objective 1.2. It should be noted that in the FY 1998 evaluation an area of improvement was stated that there were no Hanford deployments and that this was an area that the contractor needed to focus on. In FY 1999 five of the 11 deployments were at Hanford and 12 of the 19 points were focused on Hanford. This showed a significant change in focus from previous years.

- 1.2.6 Provide significant solutions to Hanford problems/needs

This performance measure identifies that the Laboratory continues to provide quality support in addressing Hanford science needs and technical gaps. The contractor submitted activities towards this indicator totaling 75.5 points. A number of these were denied for various reasons including double counting issues with other indicators. A total of 62.5 points were approved by DOE RL, which earned 55 effectiveness point in support of Objective 1.2. A change control package was submitted and approved revising the target of this indicator to 65 points. It should be noted that this change control was submitted late in the year (September) only after 2 large (5) point solutions were disapproved due to a double counting issue that should have been resolved much earlier in the year when calculating target points.

- 1.2.7 Customer Feedback on relevance and excellence in Environmental Quality Mission Areas

The survey identified a few projects with which there were issues and the contractor is working on those. There was only a 50% response rate on surveys in FY 1999, which may be due to duplicate responses from last year. The Contractor's Environmental Technology Division went beyond the requirement of how many projects to survey and randomly select others, which provided very good feedback. Although the target of 8.5 was not reached this year, there were 4.1 points in the value dimension and 4.2 in the Performance dimension totaling 8.3 points, which was well within the expected range. This performance equates to 28 effectiveness points in support of Objective 1.2. The contractor did meet the goal in performance variability with .57, which was an improvement over the FY 1998 performance variability of .62. Therefore there was no deduction in effectiveness points.

National Security

1.2.8 Number of solutions and deployments to significant national security problems/issues

This indicator measured the extent that the Laboratory addresses global and local national security needs through technology deployments or solutions to problems. Documentation on 12 different deployments and solutions were submitted to DOE RL for a total of 34 points, against a target of 38 points for FY 1999. Validation of the documentation was conducted formally through acceptance and completion forms approved by the DOE RL Director, Science and Technology Programs Division. All of the documentation submitted was approved, which earned the Contractor 94 effectiveness points in support of Objective 1.2.

1.2.9 Customer Feedback on relevance and excellence in National Security Mission Areas

This indicator measured customer satisfaction on the relevance and excellence of products and services delivered in the National Security mission areas. The outstanding survey ratings received in both relevance and excellence provided an overall score of 8.9 for this indicator earning 50 effectiveness points toward Objective 1.2.

Energy Resources

1.2.10 Number of energy technologies, systems and technical solutions deployed

The contractor had three energy deployments in FY 1999 meeting their target of three. This equates to 100 effectiveness points. The three deployments were:

- Decision Support Operations and Maintenance System at Fort Campbell, KY
- MECcheck Software Toolkit
- COMcheck-EZ Software toolkit

This was the first year for these indicators for technology deployments which helped focus on results and solutions. These deployments were in Federal and state area and the public should receive great benefit out of their utilization.

1.2.11 Customer Feedback on relevance and excellence in Energy Mission Areas

This indicator measured customer satisfaction on the relevance and excellence of products and services delivered in the Energy mission areas. There was only a 50% response rate on surveys in FY 1999, which may be due to duplicate responses from last year. The Energy Division went beyond the requirement of how many projects to survey and selected an additional 20 projects to survey which provided very good feedback. The target of 8.5 was reached this year. There were 4.1 points in the value dimension and 4.4 in the Performance dimension totaling 8.5 points, which equates to 50 effectiveness points. There was no requirement to meet a variability/standard deviation value this year due to a low response rate in FY 1998; however, they did achieve a very respectable variability of .47.

1.3 Objective: Successfully operate the Wiley Lab and ARM Facilities (10%)

All aspects of the Wiley Laboratory and ARM User Facilities measured during FY 1999 either met or exceeded expectations as noted within the indicators below. Furthermore the DOE HQ Office of Science rated the overall operations of the user facilities as outstanding. This performance earned an overall rating of 5.0 for this Objective, corresponding to an adjectival rating of **Outstanding**.

1.3.1 Successful operation of the Wiley Laboratory

This performance indicator reflects the mission of the Wiley Laboratory as a user facility; the research mission of the Wiley Laboratory is addressed in other sections of Critical Outcome 1.0. The indicator is a composite of three sub-indicators. The sub-indicators were rolled up into a numerical score based upon a continuous scale of -100 to 300 as follows:

- 300 points represents the target performance level.
- 100 points represents the neutral performance level.
- -100 points represents the minimum performance level.

Based on the performance of each of the three sub-indicators (see below) this indicator earned 300 effectiveness points in support of Objective 1.3.

1.3.1.1 Number of users of the Wiley Lab.

This performance indicator measures the number of non-organization staff users of the Wiley Lab in FY 1999. The data is reported as the number of local, regional, national or international users from academic institutions, government laboratories or private industry.

The number of non-EMSL users in FY 1998 was 686, and serves as the baseline. The number of non-EMSL users reported for FY 1999 was 834 (21.6 percent growth, or 11 users more than the target) earning the maximum of 100 effectiveness points available for this sub-indicator.

1.3.1.2 Number of peer-reviewed publications from use of the Wiley Lab by non-PNNL staff.

This performance indicator measures the number of peer-reviewed publications in FY 1999 resulting from use of the Wiley Laboratory in FY 1999 or previous years. Data was collected on peer-reviewed publications resulting from collaborative or independent use of the Wiley Lab.

In FY 1998 there were 32 publications accredited to EMSL for non-EMSL staff. For FY 1999 EMSL reported 38 publications (a 15 percent increase over FY 1998) attributed to non-EMSL staff users, which earned 100 effectiveness points in support of indicator 1.3.1. Thirty-eight publications for FY 1999 implies that only approximately 4.4 percent of EMSL users published the results of their research. Undoubtedly, the actual percentage of user publications is higher than 4.4 percent. It remains an intractable problem to determine with accuracy the number of EMSL users that publish the results of their research.

1.3.1.3 User satisfaction.

This performance indicator measured the level of satisfaction of users of the Wiley Laboratory. A User Satisfaction Survey was utilized to assess user satisfaction on a 5 point scale (very satisfied, satisfied, neither satisfied or dissatisfied, dissatisfied, very dissatisfied). On average, eighty percent of respondents provided a rating of satisfied or higher providing for 100 effectiveness points in support of indicator 1.3.1.

1.3.2 Operation of Atmospheric Radiation Measurement (ARM) Extended Research Facilities

PNNL manages day-to-day operations of three ARM Extended Research Facilities for the Department of Energy, which observe a variety of atmospheric variables for the purpose of improving the performance of global climate models. ARM data is also available to non-ARM funded researches. Each sub-indicator is combined to obtain a numerical score based upon a scale of –30 to 200 as follows:

- 200 points represents the Target performance level.
- 80 points represents the Neutral performance level.
- -30 points represents the minimum performance level.

Based on the performance of each of the two sub-indicators (see below) this indicator earned 200 effectiveness points in support of Objective 1.3.

1.3.2.1 Number of peer-reviewed publications based on ARM data

The number of peer-reviewed publications based on ARM data is an important measure of ARM productivity. In FY 1998 a baseline of 108 publications was established. The ARM exceeded the target of 119 publications for FY 1999, ending the fiscal year with 123 peer-reviewed publications (>10% growth over FY 1998), and earning the full 100 effectiveness points available in support of indicator 1.3.2.

1.3.2.2 User satisfaction.

This performance indicator measured the level of satisfaction of users of the ARM facility. A User Satisfaction Survey was utilized to assess user satisfaction on a 5 point scale (very satisfied, satisfied, neither satisfied or dissatisfied, dissatisfied, very dissatisfied). On average, ninety-seven percent of respondents provided a rating of satisfied or higher providing for 100 effectiveness points in support of indicator 1.3.2.

1.3.3 Results of DOE-SC evaluation of the quality of the Laboratory's User Facilities

As in years past the DOE HQ Office of Science has rated the overall quality of the Laboratory's user facilities to be Outstanding. This rating was determined by a weighted average of performance evaluations provided by each Office of Science program office, with budget for PNNL from each office as the weighting factor. The rating assigned by each program office was as follows:

- BES – N/A
- BER – Outstanding
- CTR – Outstanding
- Fusion – N/A

See Attachment 2 for the detailed response provided by the Office of Science.

1.4 Objective: Demonstrate leadership and excellence in program planning and management for critical outcomes (25%)

This Objective measured the Contractor's quality, technical and managerial leadership in each of the four Laboratory primary mission areas. The Contractor effectively lead the technical aspects of the Groundwater and Vadose Zone Integration project, and successfully formed eight of nine target

agreements (e.g., CRADAs, MOUs, non-government contracts, and other formal agreements) in four DOE thrust areas. Furthermore, customer feedback on programmatic leadership in Fundamental Science, National Security, and Energy mission areas were all rated as outstanding, while the Environmental Quality mission area was rated as excellent. The above performance and other successes as identified within the indicators for this Objective resulted in an overall rating of 4.5, corresponding to an **Outstanding**.

Fundamental Science

1.4.1 Demonstrate programmatic leadership within Fundamental Science

This indicator measured the Contractor's ability to provide leadership in fundamental science as judged by the Director of the Office of Science, Office of Biological and Environmental Research (OBER). The joint interview conducted by the Contractor Associate Laboratory Director of Environmental and Health Sciences, and the Director of the DOE RL Science and Technology Programs Division, identified that overall the Contractor is providing Outstanding leadership in this area. Three of the four dimensions of leadership discussed with OBER were rated as outstanding with the fourth rated as excellent. The four focus areas of leadership were:

- The quality of the Contractor's leadership
- The Contractor's ability to effectively team with other laboratories and universities,
- The degree of Laboratory Institutional support provided, and
- Overall program quality.

The overall 4.8 rating out of a 1.0 to 5.0 scale earned the Contractor 95 effectiveness points in support of Objective 1.4.

Environmental Quality

1.4.2 Demonstrate programmatic leadership in Environmental Quality

The Contractor received an overall score of 4.0 on a 5.0 scale. This was developed based upon joint DOE RL and Contractor interviews with those responsible for program oversight and direction. The detailed scores identified a lack in the degree of support that the contractor displayed as well as some lack in the quality of leadership. This was due mainly to the management inattention within the division as well as the noticeable lack of organizational stability and presence. This performance earned the Contractor 50 effectiveness points in support of Objective 1.4.

1.4.3 Effectively lead the technical aspects of the Groundwater and Vadose Zone Integration Project

The contractor earned 16.6 of the 19 points that were available for this indicator plus an additional 5 discretionary points and one bonus point for a total of 22.6 points. The discretionary/bonus points were due to their efforts in the following areas:

- Outstanding Quality and timely performance with regard to Integration/Interaction
- Early Start of Risk S&T Workshop
- Continuous engagement of LANL, LBNL, LLNL and SRTC in S&T planning and implementation
- Conducted an open public process for SAC including development and maintenance of the WEB page

- S&T Plan and Roadmap resulted in award of significant EMSP Hanford oriented Vadose Zone Projects
- Acceleration of Vadose Zone Transport Field Study planning (Bonus)

The DOE RL evaluation of the measure agreed with the Contractor's self-evaluation report with 37 effectiveness points assigned.

National Security

1.4.4 Customer Feedback on Leadership for key National Security Programs

This indicator measured the Contractor's ability to provide leadership in key National Security programs as judged by key DOE customers in three programmatic areas (Non-Proliferation/Arms Control, Office of Counter-Intelligence, and the Office of Intelligence). The joint interview conducted by the Contractor Associate Laboratory Director for the National Security Division, and the Director of the DOE RL Science and Technology Programs Division, identified that overall the Contractor is providing Outstanding leadership in these areas.

The overall 4.7 rating, out of a 1.0 to 5.0, scale earned the Contractor 62 effectiveness points in support of Objective 1.4.

Energy Resources

1.4.5 DOE customer feedback on technical and managerial leadership in the Energy thrust areas

This indicator measured the Contractor's ability to provide leadership, as judged by key DOE customers in four Energy thrust areas (Energy Efficiency and Renewable Energy, Light Weight Materials and Advanced Simulation OTT, Intelligent Buildings and Building Standards, and Advanced Fuel Cell Systems). The joint interview conducted by the Contractor Associate Laboratory Director for the Energy Technology Division, and the Director of the DOE RL Science and Technology Programs Division, identified that overall the Contractor is providing Outstanding leadership in these areas.

The overall 4.5 rating, out of a 1.0 to 5.0, scale earned the Contractor 19 effectiveness points in support of Objective 1.4.

1.4.6 Number of formal agreements (e.g., CRADAs, MOUs, non-government contracts, and other formal agreements and expressions of interest) established between October 1, 1998 and September 30, 1999 with private sector entities

The Contractor completed 8 formal agreements (e.g., CRADAs, MOUs, non-government contracts, and other formal agreements and expressions of interest) during FY 1999. This fell one short of their maximum expected target of 9. There were 5 CRADAs with private industry, 1 MOU with the Federal Energy Technology Center (FETC), and three proprietary 1831 agreements. This equates to 35 effectiveness points in support of Objective 1.4. It should be noted that although the Contractor did not make their target of 9 agreements, the MOU with FETC was a very key agreement that will allow the Energy Division to maintain a leadership role in Fuel Cell development, which is one of their key thrust areas.

Scientific and Technological Excellence Critical Outcome Performance Tables

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
1.1 Conduct high quality S&T programs					
1.1.1 Results of external peer review of relevance and excellence, including Divisional reviews	Outstanding	40			
1.1.2 Recognition by the external scientific and technical community	194 (>10% growth)	20			
1.1.3 Number of R&D 100 and FLC awards	Rolling Ave. is 8.3	10			
1.1.4 Publication Growth	19% growth	20			
1.1.5 Number of quality academic/scientific partnerships	94	10			
	Total from Curves	100	5	50%	2.5
1.1.6 Results of DOE-SC Evaluation of the quality of science	Outstanding		5.0	50%	2.5
	Obj 1.1 Total				5.0

Table 2A – Objective 1.1 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
1.2 Deliver S&T products relevant to DOE missions and national needs					
1.2.1 Results of DOE-SC evaluation of the relevance of Battelle work to DOE Missions and Needs	Outstanding		5.0	10%	0.5
1.2.2 The results of DOE-SC evaluation of the Laboratory's programmatic performance	Excellent		4.0	10%	0.4
1.2.3 Effectively lead the technical aspects of the national Tanks Focus Area	167	56			
1.2.4 Effectively support the Hanford Tanks Privatization Effort	224	68			
1.2.5 Number of innovative technologies and approaches successfully deployed in commercial practice	19	60			
1.2.6 Provide significant solutions to Hanford problems/needs	62.5	55			
1.2.7 Customer Feedback on relevance and excellence in Environmental Quality Mission Areas	8.3	28			
1.2.8 Number of solutions and deployments to significant national security problems/issues	34	94			
1.2.9 Customer Feedback on relevance and excellence in National Security Mission Areas	8.9	50			
1.2.10 Number of energy technologies, systems and technical solutions deployed	3	100			
1.2.11 Customer Feedback on relevance and excellence in Energy Mission Areas	8.5	50			
	Total from Curves	561	4.8	80%	3.8
	Obj 1.2 Total				4.7

Table 2B – Objective 1.2 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score
1.3.1 Successful Operation of Wiley Laboratory		
1.3.1.1 Number of users of the Wiley Laboratory	820 (>20% growth)	100
1.3.1.2 Number of peer-reviewed publications from use of the Wiley Lab by non-PNNL staff.	38 (15% growth)	100
1.3.1.3 User satisfaction	Average 80%	100
	Total to 1.3.1	300
1.3.2 Operation of Atmospheric Radiation Measurement Extended Research Facilities		
1.3.2.1 Number of peer-reviewed publications based on ARM data.	123 (>10% growth)	100
1.3.2.2 User satisfaction	Average 97%	100
	Total to 1.3.2	200

Table 2C - Objective 1.3, Indicators 1.3.1 and 1.3.2 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
1.3 Successfully operate the Wiley Lab & ARM Facilities					
1.3.1 Successful operation of the Wiley Laboratory	300	60			
1.3.2 Operation of ARM Extended Research Facilities	200	40			
	Total from Curves	100	5.0	50%	2.5
1.3.3 Results of DOE-SC evaluation of the quality of the Laboratory's User Facilities	Outstanding		5.0	50%	2.5
	Obj 1.3 Total				5.0

Table 2D – Objective 1.3 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
1. Scientific and Technological Excellence					
1.1 Conduct high quality S&T programs	Obj 1.1 Total		5.0	25%	1.3
1.2 Deliver S&T products relevant to DOE missions and national needs	Obj 1.2 Total		4.8	40%	1.9
1.3 Successfully operate the Wiley Lab & ARM Facilities	Obj 1.3 Total		5.0	10%	0.5
1.4 Demonstrate leadership & excellence in program planning & management ...					
1.4.1 Demonstrate programmatic leadership within Fundamental Science	4.8	95			
1.4.2 Demonstrate programmatic leadership in Environmental Quality	4.0	50			
1.4.3 Effectively lead the technical aspects of the Groundwater and Vadose Zone efforts	22.6 pts.	37			
1.4.4 Customer Feedback on Leadership for key National Security Programs	4.7	62			
1.4.5 DOE customer feedback on technical and managerial leadership in the Energy thrust areas	4.5	19			
1.4.6 Number of formal agreements ... with private sector entities	8	35			
	Obj 1.4 Total	298	4.5	25%	1.1
				Total	4.8

Table 2E – Scientific and Technological Excellence Critical Outcome Performance Rating Development

Total Score	5.0 - 4.5	4.4 - 3.5	3.4 - 2.5	2.4 - 1.5	<1.5
Final Rating	Outstanding	Excellent	Good	Marginal	Unsatisfactory

Table 2F - Scientific and Technological Excellence Critical Outcome Adjectival Rating

2.0 OPERATIONAL EXCELLENCE (20%)

This Critical Outcome measured the Contractors ability to conduct work and operate Laboratory facilities with distinction, fully supportive of and integrated with the Laboratory's science and technology mission and fully protective of workers, the public and the environment. DOE RL agrees with Battelle's self-evaluation that performance regarding this critical outcome during FY 1999 has been **Outstanding**, with an overall weighted point of 4.5. Overall the Contractor continues to provide for the safety of the worker, public and environment in an outstanding manner. The Contractor has made improvements in most of the occupational safety and health, radiological control, waste management, and environmental protection lagging indicators measured although a couple, most notably radiation contaminations, indicate the need for further management attention. Other indicators within the area of waste management and environmental protection indicate that the Contractor is meeting or exceeding expectations. Other measures of worker involvement, knowledge, and culture relative to ES&H, R&D equipment utilization, and facilities and services integration, all indicated the Contractor is meeting or exceeding expectation and areas for improvement identified are being incorporated within Contractor self-assessment plans for FY 2000. Tables 3A through 3I show how the outcome objective ratings were determined as well as the overall outcome rating.

2.1 Objective – Sustain and enhance operational excellence in safety and health, and environmental protection. (67%)

Operational excellence of ES&H was measured during FY 1999 by focussing efforts in the areas of worker involvement, training commensurate with responsibilities, and material control. Although the overall performance for the indicators measuring these areas earned an overall 4.8 value points for an **Outstanding** rating DOE RL noted areas still in need of improvement.

Although the ES&H management systems are carefully designed and well documented, a number of events throughout the year provided indications that the Contractor had not uniformly implemented ES&H systems across all levels of management and staff. Improvement is needed within the area of worker involvement. This need for improvement is supported by events during the year that reflected a lack of worker accountability for ES&H system requirements. The material control area was overall rated as excellent showing significant improvement; however, continued focus in this arena will be required throughout FY 2000.

All but one of the lagging indicators measured during FY 1999 either met or exceeded expectations and although the Skin and Personal Clothing Contamination Events indicator was below expectations, DOE RL does not believe it represents a significant health or safety issue.

2.1.1 Worker involvement, knowledge, and culture relative to ES&H (30%)

DOE RL agrees with the Contractors self-evaluation and the overall award of 165 effectiveness points (4.9 value points) as demonstrated by the sub-indicators discussed below.

2.1.1.1 Management interactions with workers to ensure staff involvement in work planning, knowledge of requirements and attitude/culture relative to ES&H.

The 216 evaluations conducted during FY 1999 was well above the target of 175 earning the Contractor 100 effectiveness points in support of indicator 2.1.1. A validation plan was developed for this indicator during the first quarter of FY 1999. The validation effort had two major components. The first was a comprehensive review of the interview protocol and the scoring guidelines. Following the review, a select number of interviews were observed in each of the major organizations to determine if the interviews were being conducted consistent

with the formal protocol and scored in accordance with the guidelines. All of the interviews that were observed followed the protocol and were scored in accordance with the guidelines. Results of the assessments were incorporated into the organizations self-assessment program and used to measure future performance.

2.1.1.2 Dose Index

The target for the dose index performance indicator was set at ≤ 0.2 cumulative for FY 1999 earning 20 effectiveness points in support of indicator 2.1.1. The Contractor achieved this target with 0.16 cumulative for the year. The performance indicator was intended to enhance interactions and work planning between line and Radiological Control Engineers. The whole body estimated dose was greater in all cases than the dose from the ACES system for the same period. The majority of the dose estimates were fairly close, however eight of the dose estimates compared to the ACES system doses were higher by several orders of magnitude. Battelle did achieve their target, but based on a number of events during FY 1999, work planning still needs improvement.

2.1.1.3 User involvement in SBMS Subject Area development

Fifty-five percent of the SBMS Subject Areas developed during FY 1999 were developed with user involvement, which earned the Contractor 45 effectiveness points in support of indicator 2.1.1. Even though the 55% involvement was a marked improvement over FY 1998 (30%), continuing emphasis needs to be placed on increasing the level of user involvement in the development phase during the next fiscal year. An increased level of user involvement usually results in a higher quality document defined in terms of applicability, acceptability, and usability. The continuing lag in improving the level of user involvement in preparing subject areas will require increased vigilance to insure that the affected subject areas are fully and effectively deployed, and that feedback obtained from users during deployment is formally captured and acted upon.

2.1.2 ES&H training commensurate with assigned responsibilities (30%)

This indicator measures the Laboratory's ability to plan training and to execute the training plans. DOE RL agrees with the Contractors self-evaluation of this indicator and the award of 120 total effectiveness points (5.0 value points).

2.1.2.1 Completion of SDTP and required ES&H training

During FY 1999 95 percent of Contractor staff completed training plans for the duties they perform, exceeding the target of 85 percent. This performance earned the Contractor 100 effectiveness points.

2.1.2.2 Completion of ES&H Training Courses

Contractor staff completed 99.1 percent of their required ES&H training courses. This exceeded the 90 percent target set for FY 1999 earning 20 effectiveness points in support of indicator 2.1.2.

2.1.3 Material Control (30%)

This indicator measures the Laboratory's ability to implement one of the core functions of DOE's Integrated Safety Management Program, management of hazards. DOE RL agrees with the Contractor's self-evaluation of this indicator and the award of 130 total effectiveness points (4.4 value points).

2.1.3.1 Chemical Management System

Although the accuracy of the Chemical Management System did not meet the FY 1999 target level of 95 percent, the 90.4 percent level achieved represents a significant improvement in this area over FY 1998 performance of 84.3 percent. The Contractor has been working to eliminate issues regarding exceeding limits established within Facility Use Agreements. Furthermore, 6 of the 10 actions identified within the Project Management Plan, issued in August 1999, have been completed and 27 of the 32 Chemical Quality Limits Technical Basis documents have been implemented, as well as, determination of product chemical constituents. The 90.4 percent accuracy level for FY 1999 earned the Contractor 50 effectiveness points in support of indicator 2.1.3.

2.1.3.2 Generator management of SAA (Slop Jars)

This sub-indicator measured the percentage of hazardous waste "slop jars," a specific type of satellite accumulation area (SAA) waste that passed content verification inspections when received by the waste operations staff. During the fourth quarter of FY 1999 there were a total of 387 Slop Jars of which 8 failed verification. The 98 percent acceptance rate achieved during FY 1999 met the target level providing 80 effectiveness points in support of indication 2.1.3. Although the target acceptance rate was met during the fourth quarter, variability of results during FY 1999 indicates the need for continued diligence in this area.

2.1.4 ES&H Lagging Performance Indicators (10%)

The composite of the sub-indicators provides an overall indication that the Contractor is sustaining excellence in the protection of workers, the public, and the environment. The DOE RL evaluation of the ES&H lagging performance indicators discussed below agrees with the overall Outstanding (4.6 value points) rating indicated within the self-evaluation report provided by Battelle.

2.1.4.1 OSHA Lost Workday Case Incidence Rate (Lost Workday Case Rate)

The Lost Workday Case Rate for FY 1999 of 0.6 per 100 staff members was less than half of the FY 1999 target rate of 1.2 and is significantly lower than the National Safety Council's 1998 benchmark level for safety performance. This earned the contractor 100 effectiveness points toward indicator 2.1.4.

2.1.4.2 OSHA Recordable Case Incidence Rate (Recordable Case Rate)

The 1.7 Recordable Case Rate per 100 staff members exceeded expectations set for FY 1999 and earned the Contractor 80 effectiveness points toward indicator 2.1.4.

2.1.4.3 OSHA Lost Workday Incidence Rate (Lost Workday Rate)

The Lost Workday Rate of 10.4 per 100 staff members exceeded the expectations set for FY 1999 by almost half earning the Contractor 40 effectiveness points toward indicator 2.1.4.

2.1.4.4 Unplanned Doses:

The Contractor met the FY 1999 target of no (0) unplanned dose events earning 100 effectiveness points in support of indicator 2.1.4.

2.1.4.5 Spread of Radioactive Contamination

Although the Contractor experienced one spread of radioactive contamination event over the target for FY 1999, the three events was within expected limits and earned 25 effectiveness points in support of indicator 2.1.4.

2.1.4.6 Loss of Radioactive Sources

The Contractor met the FY 1999 target of no (0) losses of radioactive sources earning 30 effectiveness points in support of indicator 2.1.4.

2.1.4.7 Skin and Personal Clothing Contamination Events

Although the Contractor did not met expectations in this area DOE RL does not believe the 12 skin and personal clothing contamination events represent an overall poor health and safety performance. The performance of this sub-indicator earned the Contractor –3 effectiveness toward indicator 2.1.4.

2.1.4.8 Environmental Protection

During FY 1999 there were 2 environmental events, which exceeded the target of only one event, however, this was within the expected range earning the Contractor 50 effectiveness points in support of indicator 2.1.4. Of the two events the most significant was the Tritium Target Qualification Program release. The Washington Department of Health issued a Temporary License Suspension for the Tritium Target Program shortly after the event; however, prompt action taken by the Contractor to evaluate the processes and procedures and identify corrective actions led to the reinstatement of the license.

2.1.4.9 Transportation of DOE Hazardous Materials

The Contractor had no (0) events regarding transportation of DOE hazardous materials during FY 1999 earning the contractor 20 effectiveness points in support of indicator 2.1.4.

2.2 Objective: Increase mission capabilities through enhancement and effective use of Laboratory facilities and assets. (33%)

DOE RL agrees with the overall rating of **Excellent** indicated within their self-assessment report for this objective, however the value points awarded was 3.9 vs. the overall 3.8 determined by the Contractor. The additional tenth point was awarded based on the enhanced manner in which Network infrastructure upgrade projects were planned and managed, completing one more project than in past fiscal years.

2.2.1 Facilities (Buildings): Utilization of space is commensurate with science and technology mission needs (60%)

The composite of the sub-indicators discussed below provides an overall indication of how well the Contractor's process for space utilization is supporting the Laboratory's science and technology mission. The DOE RL evaluation of the sub-indicators agrees with the overall Excellent (3.4 value points) rating indicated within the self-evaluation report provided by Battelle.

2.2.1.1 Total office space assigned per number of staff members in an organization

The measure of average office space usage reflected no real change during the year with a year end average of 134 ft²/person. This results in a performance level far short of the target level of 123 ft²/person earning only 8 effectiveness points in support of indicator 2.2.1. A review of the indicator confirmed that appropriate data was used to determine performance and that the contractor validated that data. The performance rate stability is attributed to recognition that the ratio of office square feet and the number of seated staff have remained stable. Factors that could affect any change were evaluated during the year; however, no plan or steps were instituted during the year, which could be expected to affect the end of year results. A number of actions were taken to affect improvements in the long term. These include the formation of a facility strategic planning group, and the development of some space occupancy standards, which are yet to be implemented. Although the Contractor's self-evaluation of this measure reflects it to be of "little utility," our review noted that an understanding of this information by facility might be of much greater utility than one by organization.

2.2.1.2 Staff Churn Rate

The rate for moving offices remained steady at 21% throughout the year a level, which well exceeded the target of 50%. A review of the indicator established that the Contractor took appropriate steps to validate the data used to determine performance. The basis of this target however was established by benchmarking which might not reflect an accurate parallel to the conditions at the Lab. The reason for the low churn rate is attributed to lack of adequate space. This performance earned the Contractor 50 effectiveness points in support of indicator 2.2.1.

2.2.1.3 Continuous improvement in F&O services and operations realized from benchmarking

Although the Contractor did not meet the targets set for the two parts of decreased overall costs per gross square foot of space and improvement in customer satisfaction survey (0 points earned), recognition of the substantial cost savings (\$1.5M) does contribute toward the objective of effective use of lab facilities. Based on this performance this sub-indicator earned no (0) effectiveness points.

2.2.2 R&D Equipment Utilization (10%)

DOE RL agrees with the Contractor's determination regarding the performance level (239 points) for this indicator, earning 76 effectiveness points (4.5 value points), the agreement for success of this performance indicator was to complete design and development during the first quarter of FY 1999. Battelle did not meet this goal. Due to this delay, tracking for several

pieces of R&D equipment from the list was not initiated until well after the first quarter, resulting in less than 100% tracking of the equipment on the list.

The impact of this activity has been very positive. Initially, the Contractor was reluctant to engage in tracking R&D equipment and did not see value in documenting the accountability of use per piece of equipment. The input from the participation of Laboratory Scientists involved in this effort however confirmed that the efforts and the results were helpful in planning and scheduling. The scientists also encouraged the expansion of the pilot tracking to cover most--if not all--Laboratory equipment.

2.2.3 Facilities and Services Integration: An increased level of interaction with other Hanford Site contractors supporting facility infrastructure and services. (30%)

The composite of the sub-indicators discussed below provides an overall evaluation of the Contractor's processes for increasing the Laboratory's mission capabilities through its facility assets. The DOE RL evaluation of the sub-indicators provides an overall rating of Outstanding (4.5 value points). This is a higher rating than that provided within the Contractor's self-assessment report (4.4 value points), which is based on the higher rating provided for sub-indicator 2.2.3.4.

2.2.3.1 Increased level of interaction with other Hanford Site contractors on key issues supporting facility infrastructure and services.

The increased interaction with other Hanford site contractors at the Site Integration meetings resulted in enhanced communication of strategic infrastructure planning. This interaction met the attendance rating (90% attendance) but the ultimate goal of obtaining a long-term plan within the 300 Area remains a work in progress. These interactions are just a part of the effort needed to achieve that more strategic goal. This sub-indicator earned the Contractor 100 effectiveness points.

2.2.3.2 Minimization of impact to the Laboratory due to site infrastructure failures and future usage by development/deployment of effective System Engineering process.

The Minimization of impact to the Laboratory of infrastructure failures and future use by development or deployment of effective system engineering processes resulted in a large step toward more long term and integrated planning for the Laboratory facilities. A major portion of this planning was reflected in the development of 33 (79%) of 42 building life-cycle plans which were completed, which earned the Contractor 85 effectiveness points in support of indicator 2.2.3. Although not a part of FY 1999's evaluation there remains a phase II enhancement development to complete.

2.2.3.3 Improve the scope definition and cost of site services by using activity-based and customer-focused methods.

Battelle's work with the Site Integration Group (SIG) helped to improve scope definition and cost of site services. The Contractor worked several proposals during the year including issues of cost allocation of services, utilities and implemented a Waste Identification System process for a cost savings of approximately \$1M, which meets the intent of this indicator and achieving an Outstanding rating. This performance earned the Contractor 85 effectiveness points in support of indicator 2.2.3.

2.2.3.4 Complete Scheduled Network Infrastructure Upgrade Projection Plans and Projects.

The Contractor has completed 2 of the 3 agreed to Network infrastructure upgrades slightly behind schedule. Because of the enhanced manner by which these projects were planned and managed one more project was completed than past fiscal years achieved. This is considered an extra credit achievement toward an incremental increase from a Good to an Excellent rating for this sub-indicator. This rating of Excellent raises to effectiveness point from –10, as documented within the Contractor’s self-assessment report to 0 effectiveness points.

Operational Excellence Critical Outcome Performance Tables

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.1.1 Worker involvement, knowledge, and culture relative to ES&H			
2.1.1.1 Management interactions with workers to ensure staff involvement in work planning, knowledge of requirements and attitude/culture relative to ES&H	216 assessments	100	
2.1.1.2 Dose Index	0.16	20	
2.1.1.3 User involvement in SBMS Subject Area development	55%	45	
	Composite Total	165	4.9

Table 3A - Objective 2.1, Indicator 2.1.1 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.1.2 ES&H training commensurate with assigned responsibilities			
2.1.2.1 Completion of SDTP and required ES&H training	95.5%	100	
2.1.2.2 Completion of ES&H Training Courses	99.1%	20	
	Composite Total	120	5.0

Table 3B - Objective 2.1, Indicator 2.1.2 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.1.3 Material Control			
2.1.3.1 Chemical Management System	90.4%	50	
2.1.3.2 Generator management of SAA (Slop Jars)	98%	80	
	Composite Total	130	4.4

Table 3C - Objective 2.1, Indicator 2.1.3 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.1.4 ES&H Lagging Performance Indicators			
2.1.4.1 OSHA Lost Workday Case Incidence Rate (Lost Workday Case Rate)	0.6	100	
2.1.4.2 OSHA Recordable Case Incidence Rate (Recordable Case Rate)	1.7	80	
2.1.4.3 OSHA Lost Workday Incidence Rate (Lost Workday Rate)	10.4	40	
2.1.4.4 Unplanned Doses	0	100	
2.1.4.5 Spread of Radioactive Contamination	3	25	
2.1.4.6 Loss of Radioactive Sources	0	30	
2.1.4.7 Skin and Personal Clothing Contamination Events	12	-3	
2.1.4.8 Environmental Protection	2	50	
2.1.4.9 Transportation of DOE Hazardous Materials	0	20	
	Composite Total	442	4.6

Table 3D - Objective 2.1, Indicator 2.1.4 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.2.1 Facilities (Buildings): Utilization of space is commensurate with science and technology mission needs			
2.2.1.1 Total office space assigned per number of staff members in an organization	134 sq. ft.	8	
2.2.1.2 Staff Churn Rate	21%	50	
2.2.1.3 Continuous improvement in F&O services and operations realized from benchmarking	0 pts.	0	
	Composite Total	58	3.4

Table 3E - Objective 2.2, Indicator 2.2.1 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.2.2 R&D Equipment Utilization	239 pts.	76	4.5
	Composite Total		4.5

Table 3F - Objective 2.2, Indicator 2.2.2 Performance Rating Development

ELEMENT	Performance Level	Effectiveness Score	Value Points
2.2.3 Infrastructure: Physical asset acquisitions and modifications follow an integrated and systematic process			
2.2.3.1 Increased level of interaction with other Hanford Site contractors on key issues supporting facility infrastructure and services	90%	100	
2.2.3.2 Minimization of impact to the Laboratory due to site infrastructure failures and future usage by development/deployment of effective System Engineering process	79%	85	
2.2.3.3 Improve the scope definition and cost of site services by using activity-based and customer-focused methods	Outstanding	85	
2.2.3.4 Complete Scheduled Network Infrastructure Upgrade Projection Plans and Projects	Excellent	0	
	Composite Total	270	4.5

Table 3G - Objective 2.2, Indicator 2.2.3 Performance Rating Development

ELEMENT	Value Points Tables 2.1-2.7	Weight	Performance Level	Effectiveness Score	Value Points	Obj. Weight	Weighted Points
2.0 Operational Excellence							
2.1 Sustain and enhance operational excellence in safety and health, and environmental protection							
2.1.1 Composite from Table 2.1	4.9	30%			1.5		
2.1.2 Composite from Table 2.2	5.0	30%			1.5		
2.1.3 Composite from Table 2.3	4.4	30%			1.3		
2.1.4 Composite from Table 2.4	4.6	10%			0.5		
			Obj 2.1 Total		4.8	67%	3.2
2.2 Increase mission capabilities through enhancement and effective use of Laboratory facilities and equipment							
2.2.1 Composite from Table 2.5	3.4	60%			2.0		
2.2.2 Value from Table 2.6	4.5	10%			0.5		
2.2.3 Composite from Table 2.7	4.5	30%			1.4		
			Obj 2.2 Total		3.9	33%	1.3
						Total	4.5

Table 3H Operational Excellence Critical Outcome Performance Rating Development

Total Score	5.0 - 4.5	4.4 - 3.5	3.4 - 2.5	2.4 - 1.5	<1.5
Final Rating	Outstanding	Excellent	Good	Marginal	Unsatisfactory

Table 3I - Scientific and Technological Excellence Critical Outcome Adjectival Rating

3.0 LEADERSHIP AND MANAGEMENT (20%)

This Critical Outcome measured the Contractor's ability to provide leaders/managers and produce efficient management systems that effectively support employees in the performance of their mission responsibility. As in the past the Quality of Work Life survey provided valuable information regarding staff perceptions and marked improvements were noted in DOE RL staffs satisfaction with the Contractor's use of self-assessment to drive improvements. Based on these and the performance of other objective/indicators within this outcome a rating of **Outstanding** is awarded, with an overall weighted point of 4.5. One area of continued concern is the Research-to-Support Staff Labor Ratio, which failed to meet expectations for the second year in a row. Contractor management attention to this area is required to ensure the root cause is identified and appropriate actions are taken during FY 2000.

- 3.1 Objective - Battelle will provide leadership and management to foster a work environment that optimizes staff satisfaction and individual contribution. (30%)

The overall outstanding performance within the measures of this objective is a indication of Battelle's continued commitment to providing a quality work life environment for the staff of the Laboratory and supports the **Outstanding** rating (4.5 value points) awarded. The Quality of Work Life survey conducted as the measure of this objective not only provided valuable information regarding staff separation rates and personal/professional development, but provided a wealth of input in a number of other areas concerning the overall health of the Contractor organizations. This information, as in the past, must be utilized to its fullest to assist in continued improvement throughout the Laboratory.

3.1.1 Staff separations rate

DOE RL agrees with the Contractor's self-assessment of this measure and the award of 70 effectiveness point in support of Objective 3.1. The results showed that Battelle is in the 25 percentile of all Research and Development industries that are participants in sharing Saratoga Institute data. Alignment with industry norms and lower than industry rates attests to the positive attention to this issue by Battelle management.

3.1.2 Personal/Professional Development

As part of the FY 1999 Quality of Work Life survey, conducted by International Survey Research (ISR), 10 questions were agreed upon between DOE RL and the Contractor for evaluating Personal/Professional Development. Battelle exceeded expectations with a composite average positive response greater than one standard deviation above the Research and Development norm of the ISR data. Some of the organizations included in the norm were Argonne National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Bell Labs Innovations, and Phillips Electronics. This performance earned the Contractor 40 effectiveness points. Notwithstanding this high rating, certain segments of the Laboratory population still require focus by Battelle management during FY 2000.

- 3.2 Objective - Battelle Leadership provides effective management systems to drive improvements enabling DOE to optimize oversight activities. (40%)

This objective measured the effectiveness of the Contractor's management systems from an independent perspective, an external customer perspective, and an internal customer perspective. Internal and external surveys of Laboratory customers exceeded expectations indicating that Battelle is making very good progress regarding implementation and deployment of the self-assessment program

and a high percentage of satisfaction with the management systems. Independent reviews confirmed these results. Based on the ratings of the indicators below, this objective is rated as **Outstanding** (4.9 value points). The Contractor must continue to work closely with DOE RL to ensure the recent success in partnering via the Self-Assessment Program continues.

3.2.1 Contractor's independent annual averaged rating of Laboratory and Division/Directorate Self-Assessment effectiveness.

The Contractor's performance exceeded expectations on this indicator. The independent reviews of self-assessment and business results performed by the Contractor and AMT staff indicated above-average performance in these two areas. The review of the Laboratory's leadership process that was conducted by outside consultants indicated that these processes are at the Premier level when compared to other national and international businesses and earned 96 effectiveness points in support of Objective 3.2. These are impressive results and continue to show progress in institutionalizing self-assessment in Laboratory operations

3.2.2 DOE's satisfaction with the implementation of the Contractor's self-assessment process.

The Contractor's performance exceeded expectations on this indicator. Twenty-one of twenty-three DOE RL respondents (91%) rated their satisfaction with the contractor's use of self-assessment to effectively drive improvements in key areas as a three (GOOD) or better on a five-point scale. This exceeds the goal of 90% for this measure and represents a significant increase from last year's performance and earns the Contractor 60 effectiveness points in support of Objective 3.2. While this measure does not formally carry over into fiscal year 2000, the Contractor is encouraged to keep monitoring this area of performance and to strive to increase the number of respondents who report satisfaction on this question at a level of four (EXCELLENT) or higher. Continuing to foster increased interaction between DOE RL and Laboratory Contractor counterparts remains a key success factor for Battelle's self-assessment process.

3.2.3 Staff satisfaction with internal products, services, and systems from Laboratory management systems.

The Contractor's performance exceeded expectations on this indicator as well. The average score for Laboratory internal customer satisfaction with the services, products, and systems provided the Laboratory's management system was 3.76, exceeding the target performance level of 3.7 and earning 60 effectiveness points in support of Objective 3.2. A relatively low (4%) percentage of all respondents were either dissatisfied or very dissatisfied with the management systems performance in this area. The data collected by this survey was designed to be more useful this year in that it provides a breakdown of satisfaction by each individual management system and also differentiates between the actual system and tools and the service provided by management systems staff. There was significant variability in satisfaction between the different management systems and this data will allow targeted improvement efforts.

3.3 Objective – Battelle leadership and management promote open and effective business operations. (30%)

Although the Research-to-Support Staff Labor Ratio performance continues to be an issue, overall the Contractor performance in promoting effective business operations meet expectations earning a rating of **Excellent** (3.6 value points). This agrees with the adjectival rating within the Contractor's self-

evaluation, however, the value points awarded are slightly lower due to the final assessment of indicator 3.3.3. This was the second year in a row that the Contractor fell short of the goal for the Research-to-Support Staff Labor Ratio. It is important to understand the root cause of the inconsistency if this issue is to be corrected during FY 2000. Close and early attention must be paid to the optimum support staff required to accommodate anticipated growth in research staff, if the anticipated growth is not occurring. Although this measure is not included in the FY 2000 Critical Outcomes, DOE RL will continue to monitor this issue closely.

3.3.1 Research/support staff labor ratio

This measure fell short of expectations, for the second year in a row. The ratio of 2.3 for FY 1999 equates to –50 effectiveness points. The shortfall was due to the Contractor falling behind on direct FTEs (Research staff) and an increased investment in organizational overhead labor costs (Support staff). The Contractor needs to pay close attention to this indicator early on during FY 2000 to insure required actions to better balance staffing requirements are identified and initiated in such a manner as to alleviate this issue during this fiscal year.

3.3.2 Average cost per research FTE

Although the measure fell short of the performance target and was well behind the expected levels throughout the year, improvements during the fourth quarter raised the overall performance to a point within expectations. Increases in Associated Western Universities (AWU) students and increased hiring during the fourth quarter, along with managing the total operating costs of the Laboratory to targeted performance levels, contributed to the final average cost per research FTE of \$123.00. This performance earned the Contractor 80 effectiveness points in support of Objective 3.3.

3.3.3 DOE's evaluation of overall Contractor performance in the business management functional areas.

The FY 1998 review of Battelle business management functional areas indicated that overall they are meeting or exceeding DOE RL expectations and a rating of 4.3 (Excellent) was awarded providing 53 effectiveness points for this indicator. The following table indicates the ratings awarded by each functional area. Details regarding each can be found within the Business Management Oversight Review Report appended to this document or within Section III, "Self-Assessment Reviews."

Business Management (BMOP) Activity	Adjectival Rating	Value Points
(1) Administrative Services (Printing – 4.0, Library – 4.0)	Excellent/Excellent	4.0
(2) Congressional, Public, and Intergovernmental Affairs	Outstanding	5.0
(3) Diversity	Good	3.0
(4a) Finance	Excellent	4.0
(4b) Budget	Outstanding	5.0
(4c) Internal Audit	Excellent	4.0
(5) Information Management (Records Management – 4.0, Y2K – 5.0)	Excellent/Outstanding	4.5
(6) Laboratory and Institutional Business Planning	Outstanding	5.0
(7) Life Cycle Assets Management	Excellent	4.0
(8) Manpower and Personnel (HR – 4.0/Trining – 5.0)	Excellent/Outstanding	4.5

Business Management (BMOP) Activity	Adjectival Rating	Value Points
(9a) Safeguards and Security	Excellent	4.0
(9b) Classification/Declassification	Excellent	4.0
(9c) Emergency Management	Excellent	4.0
(10) Personal Property	Excellent	4.0
(11) Procurement	Excellent	4.0
(12) Scientific and Technical Information Administration	Excellent	4.0
(13) Technical Partnerships Administration	Outstanding	5.0
(14a) Worker Transition	Excellent	4.0
(14b) Community Transition	Outstanding	5.0
(15) Work-for-Others Administration	Outstanding	5.0
(16) Legal and Patent Services	No Rating Rec'd	--

Leadership and Management Excellence Critical Outcome Performance Tables

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
3.0 Leadership and Management					
3.1 Battelle will provide leadership & management to foster a work environment that optimizes staff satisfaction and individual contribution.					
3.1.1 Staff separation rate	25 th perct.	70			
3.1.2 Personal/Professional Development	>1 std. Dev.	40			
	Obj 3.1 Total	110	4.5	30%	1.4
3.2 Battelle Leadership provides effective management systems to drive improvements enabling DOE to optimize oversight activities					
3.2.1 Contractor's independent annual averaged rating of Laboratory and Division/Directorate Self- Assessment effectiveness.	304	96			
3.2.2 DOE's satisfaction with the implementation of the Contractor's self-assessment process	91%	60			
3.2.3 Staff satisfaction with internal products, services, and systems from Laboratory management systems	3.76	60			
	Obj 3.2 Total	216	4.9	40%	2.0
3.3 Battelle leadership and management promote effective business operations					
3.3.1 Research/Support staff labor ratio	2.3	-50			
3.3.2 Average cost per research FTE	\$123	80			
3.3.3 DOE's evaluation of overall Contractor performance in the business management functional areas	4.3	53			
	Obj 3.3 Total	83	3.6	30%	1.1
				Total	4.5

Table 4A - Leadership and Management Critical Outcome Performance Rating Development

Total Score	5.0 - 4.5	4.4 - 3.5	3.4 - 2.5	2.4 - 1.5	<1.5
Final Rating	Outstanding	Excellent	Good	Marginal	Unsatisfactory

Table 4B - Scientific and Technological Excellence Critical Outcome Adjectival Rating

4.0 COMMUNITY RELATIONS (5%)

This Critical Outcome measured the Contractor's ability to involve and benefit the communities to assure that the Laboratory and Battelle remain valued assets to the Tri-Cities and the Northwest Region. DOE RL agrees with Battelle's self-evaluation that performance regarding this critical outcome during FY 1999 has been **Outstanding**, with an overall weighted point of 5.0. Of note was the Contractor's continued support in launching or expanding new technology-based businesses in the area and their impact on science, mathematics and technology education. Furthermore, Battelle launched a new volunteerism program, "Team Battelle," engaging hundreds of Contractor staff in a number of community programs. Tables 5A and 5B show how the outcome objective ratings were determined as well as the overall outcome rating.

- 4.1 Objective - Battelle will continue/establish partnerships with local and regional organizations to enhance science, mathematics, and technology education reform efforts in schools. (15%)

As indicated by the performance of this objective the Contractor continues to have a significant impact on science, mathematics, and technology education reform. DOE RL agrees with the rating of **Outstanding** (5.0 value points) earned by this objective in support of Critical Outcome 4.0.

- 4.1.1 The impact of Laboratory-sponsored programs for teachers of science, mathematics, and technology education in partner school districts.

The Laboratory-sponsored programs for teachers of science, mathematics, and technology education continues to be rated as one of the most impactful available by those who participate in it. Seventy-four out of 80 teachers who participated in programs during FY 1999 returned the post-event surveys and of the 74, 90.5 percent rated the program as a 10 or higher out of 12 points possible. This outstanding performance provided 100 effectiveness points.

- 4.2 Objective - Battelle will put technology to work in the Tri-Cities and Pacific Northwest to create and sustain a diversified and strong economy. (50%)

Battelle exceeded all expectations within this objective earning a rating of **Outstanding** (5.0 value points). This rating agrees with the Contractor self-assessment and is a tribute to Battelle's continued innovative support of the region in the face of continuing decrease of funding for such activities.

- 4.2.1 Number of local firms for which technical assistance is initiated each year.

Battelle performed very well in this area, providing technical assistance to 61 qualified entities (businesses & individual entrepreneurs), exceeding the target of 55 businesses. This performance earned 50 effectiveness points.

- 4.2.2 Survey of local firms on the value of PNNL technical assistance.

At the close of each technical assistance project, a survey was conducted of the firm receiving the assistance to ascertain the quality of Battelle's involvement. As in past years, Battelle's performance was highly rated, 90 percent of those firms who responded to the survey rated the services provided as satisfactory or higher on a 5-point Likert Scale. This performance exceeded the target earning 30 effectiveness points.

4.2.3 The number of new businesses started in the area.

Battelle performed very well, having been instrumental in the formation of 10 businesses during FY 1999, for a total of 100 effectiveness points. DOE RL staff visited each of the 10 businesses evaluating them against the following criteria:

- Has a business plan been developed?
- Have the required facilities and/or equipment been obtained?
- Is there a management team in place?
- Has necessary support staff been hired?
- Is necessary financing in place?
- Have markets been identified?
- Is the company's technology protected?
- Are required business licenses in place?
- Has the product or service reached the feasibility study stage of development (minimum)?
- Have potential customers been identified or have actual sales been made?

To be considered a viable business at least eight of the above ten criteria must be met. Visits to each of the 10 candidate firms submitted by Battelle verified that all ten met at least eight of the criteria. Therefore, Battelle has been credited with helping start the following 10 businesses: Agri-Biotics, Airtek, Custom Catalogs OnLine, Inc., Custom Twist Woolen Mill, L.L.C., EDAX (formerly C-Thru-Technology), FastRack, Knovation, Spencer Technology, USA Referral, and XL Sci-Tech, Inc. The 10 companies offer vastly different products or services, and the Contractor's assistance to them consisted of varied kinds of support, such as technical assistance, entrepreneurial leaves of absence, marketing studies, business consultation, etc.

4.3 Objective - Battelle will serve the communities to further enhance the Laboratory's status as a valued corporate citizen of the Northwest region. (35%)

Battelle's exceptional performance in serving the communities to further enhance the Laboratory's status as a valued corporate citizen of the Northwest region earned a rating of Outstanding (4.8 value points) for this objective. During FY 1999 Battelle continued their strong volunteer presence within the community by launching a program "Team Battelle" to help increase and reward staff involvement. Also, Contractor efforts to further understand the needs of the local minority community and bring the capabilities of the Laboratory to the attention of state opinion leaders and government officials were very successful. Based on the performance of the indicators discussed below this objective is rated **Outstanding** (4.8 value points).

4.3.1 Successfully deploy a community volunteerism program

DOE RL agrees with the Contractor's self-assessment regarding this measure, earning 80 effectiveness points in support of Objective 4.3. During FY 1999 Battelle launched a new program at the Laboratory called "Team Battelle," a program originally started at Battelle – Columbus. Performance of the community volunteerism program dramatically exceeded everyone's expectations. During FY 2000 the Contractor should continue to measure the success of this and other such programs, with a shift from an involvement indicator to one measuring impact of the program.

4.3.2 Battelle will conduct focus group meetings with selected community members and develop a subsequent action plan that specifically addresses a proactive approach to enhance opportunities for the minority population within the Tri-Cities and greater community.

Contractor performance exceeded expectations on this measure. They achieved all of the points possible on this indicator by completing all planned activities. Particularly notable are the contractor's minority focus group efforts and the action plan that they developed in response to feedback from the focus group meetings. They also completed a pilot Awareness Training program for the laboratory as well as a pilot training on laboratory culture that was presented to minority summer students. To continue progress in this area, the Contractor should evaluate the effectiveness and relevance of the training programs and action plan and revise them as necessary. The revised programs should be broadly implemented in the coming fiscal year. This indicator earned 50 effectiveness points in support of Objective 4.3.

4.3.3 Successful deployment of campaigns to increase awareness of Laboratory capabilities applicable to issues and industries of regional significance.

Like the other two indicators within this Objective performance within this area exceeded expectations and earned 80 effectiveness points in support of Objective 4.3. Like the volunteerism indicator (4.3.1), further progress in this area should be based on measurable impacts on the region (e.g., issues resolved through acknowledged Laboratory contributions, etc.) or the Laboratory (e.g., business volume increases, expressions of interest, etc.).

Community Relations Excellence Critical Outcome Performance Tables

ELEMENT	Performance Level	Effectiveness Score	Value Points	Weight	Weighted Points
4.0 Community Relations					
4.1 Battelle will continue/establish partnerships with local and regional organizations to enhance science, mathematics and technology education reform efforts in schools					
4.1.1 The impact of Laboratory-sponsored programs for teachers of science, mathematics, and technology education in partner school districts	90.5%	100			
	Obj 4.1 Total	100	5.0	15%	0.8
4.2 Battelle will put technology to work in the Tri-Cities and Pacific Northwest to create and sustain a diversified and strong economy					
4.2.1 The number of local firms for which technical assistance is initiated each year.	61	50			
4.2.2 Survey of local firms on the value of PNNL technical assistance	90%	30			
4.2.3 The number of new businesses started in the area.	10	100			
	Obj 4.2 Total	180	5.0	50%	2.5
4.3 Battelle will serve the communities to further enhance the Laboratory's status as a valued corporate citizen of the Northwest region					
4.3.1 Successfully deploy a community volunteerism program	8 pts.	80			
4.3.2 Battelle will conduct focus group meetings with selected community members and develop a subsequent action plan that specifically addresses a proactive approach to enhance opportunities for the minority population within the Tri-Cities and greater community.	10 pts.	50			
4.3.3 Successful deployment of campaigns to increase awareness of Laboratory capabilities applicable to issues and industries of regional significance	9 pts.	80			
	Obj 4.3 Total	210	4.8	35%	1.7
				Total	5.0

Table 5A - Community Relations Critical Outcome Performance Rating Development

Total Score	5.0 - 4.5	4.4 - 3.5	3.4 - 2.5	2.4 - 1.5	<1.5
Final Rating	Outstanding	Excellent	Good	Marginal	Unsatisfactory

Table 5B - Scientific and Technological Excellence Critical Outcome Adjectival Rating

III SELF-ASSESSMENT REVIEWS

Self-Assessment Review Summary

DOE Order 224.1 “Contractor Performance-Based Business Management Process” and DOE Policy 450.5 “Line Environment, Safety and Health Oversight” set forth the expectations for DOE oversight of Contractors and the use of contractor self-assessment programs as the cornerstone of oversight. This process has been implemented by RL for the overall oversight of the management and operation Contractor for the Laboratory not only for the ES&H/Operations and Business areas but also for the Program Technical area. Although other elements of oversight activities (i.e., daily oversight, internal and external reviews, for cause reviews, etc.) are utilized by DOE in its overall assessment of the Contractor’s performance, this section of the evaluation report primarily focuses on the self-assessment program.

Partnering Relationship:

An effective partnering relationship has been established and is being used in the contract performance evaluation agreement through the critical outcome process. The Contractor's evaluation is based upon the agreed to performance outcomes, objectives and measures. Also, each of the Organizations have prepared and are utilizing Self-Assessment Plans developed, in the most part, with their DOE RL counterparts as appropriate. Although there has been improvement, the Contractor working in close conjunction with DOE RL is one of the key areas, which can further strengthen the assessment program and result in performance improvements. In addition it can help ensure that there is the right balance between contractor and external oversight activities, with an increased focus toward resolution of issues.

Management Systems:

The review of the Contractor Integrated-Assessment Program during FY 1999 indicates that the approach set forth and utilized for the past four years continues to be appropriate and in general satisfies the requirements contained in DOE O 224.1 and DOE P 450.5. The Contractor self-assessment program appears to be fully deployed through the organizations and individual management systems of the Laboratory. However, the results of our review indicates improvements are necessary in the following key areas:

- An approach for systematically developing an integrated laboratory-level self-assessment needs to be established. The action taken this year to identify key laboratory level vulnerabilities is noteworthy, however, has not been implemented in the management systems. As a result the implications to the overall Laboratory strategy and follow through with integrated corrective actions plans is lacking.
- The self-assessment process has not been sufficiently deployed down through the organizations/management systems to provide objective evidence to show requirements, processes, and procedures are consistently followed and that the management systems are appropriately integrated and effective. Management attention is required in this area to ensure the self-assessment program is fully deployed and utilized to objectively document the appropriate integration of all management systems, identify areas for improvement and ensure actions are initiated to ensure continuous improvement.

Annual Self-Assessment:

Our review of the Annual Self-Evaluation indicates that a robust, rigorous, and credible self-assessment process has been implemented. In most cases, the concerns identified during our review validate the conclusions and indicated areas for improvement reported in the Contractor self-evaluation. The success in this area is documented throughout this review and has been observed during daily oversight activities throughout the year. Battelle is to be commended for their forthright approach in dealing with areas identified for improvement. Some areas noted where improvement is needed includes the following:

- Integration of assessment results for the multiple self-assessment plan.
- More complete description of how key in-process (external and internal) requirements are being met.
- Improvement plans for the identified improvement opportunities should be included.

1. BUSINESS MANAGEMENT OVERSIGHT REVIEW

1.1 Administrative Services (Printing & Library)

Battelle has proven to be a leader in the area of Printing and Reproduction. Deployment of the DocuTech technology indicates the Contractor's recognition of printing needs for the present and the future. As a result of process improvements, Battelle also has an excellent customer service record. The Contractor is actively involved in surveying customers to ensure that satisfaction is met. Feedback from the surveys is used to improve processes within the existing system. We also believe the Contractor's printed material is being produced in compliance with Federal statutory provisions and congressional regulations. Based on the above the area of printing and reproduction is rated as Excellent.

During FY 1999 the Technical Library met its objectives to partner with others, maintain a relevant collection of resources, and sustain its high level of customer satisfaction earning a rating of Excellent. Library staff have actively and consistently participated in both the Hanford Technical Information Council and committees set up by the Office of Scientific and Technical Information. Those committee activities contributed, among other things, to DOE's plans for access to a major publisher of scientific journals. Library staff continued development activities based upon Hanford missions, program interests, and customer input. The library is looking for ways to obtain better customer satisfaction data as its system consistently results in a 95 percent of better satisfaction rate.

1.2 Public Affairs

Battelle continued their aggressive and proactive approach to communicating with the regional community and a number of other stakeholders. The Contractor has provided a full range of external and internal stakeholders and customers with appropriate information in a timely, accurate, complete, and business-like manner. They successfully placed news articles and special features in national publications that have enhanced the Laboratory's stature as one of the Department's premiere multi-purpose, multi-function National Laboratory's. Notable accomplishments/activities over the fiscal year included:

- The Contractor's communication strategy for meeting communications needs of the Department and the Hanford Site consistently publicizes Laboratory attributes in a way that reflects well on DOE and its mission.
- Battelle fully and completely responded in a timely fashion to requests for information from DOE RL, DOE HQ, stakeholders, regulators, and other customers. Media relations were professional and responsive.
- The Contractor adequately supported visits and tours at Hanford.

- Battelle's visibility in the community continues to grow through various outreach and involvement activities. Education and outreach has been rated outstanding by participating teachers in the partnering effort to enhance science, mathematics, and technology education.
- Team Battelle, launched during FY 1999, resulted in high visibility in the community through volunteer work in 36 different Laboratory sponsored programs.

Battelle's ability to identify and respond to targeted communications needs and its staff's capabilities to develop relationships with local, regional, state, and national media meant continued success in FY 1999 in publicizing Laboratory and DOE accomplishments earning a rating of Outstanding for FY 1999.

1.3 Diversity

The Contractor's Equal Employment Opportunity (EEO) Diversity Program recently received recognition in the Tri-City Herald for an Exemplary Voluntary Effort award from Labor Secretary Alexis M. Herman for the Laboratory's recent efforts in trying to attract qualified women and minorities. The Richland Operations Office would also like to commend the Contractor for their efforts, particularly in light of the 1997 Laboratory internal review that showed too few women and minorities applying for jobs, and the high turnover rate for those who were hired by the Contractor.

However, in the Hanford Site Performance Report for Fiscal Year 1999, statistics show that Battelle still has significant room for improvement. Compared to the average values for the civilian labor force, for example, Black and Hispanic males and females are significantly under-represented at the Laboratory. In fact, Black males and females are under-represented at the Laboratory by an order of magnitude. Hispanic males and females are also under-represented by more than 50% in comparison to the civilian labor force.

Additionally, in the ethnic/racial background comparison of the PNNL 1999 Quality of Work Life Survey, there are statistically significant concerns expressed regarding diversity and working conditions at the Laboratory by those in the "other ethnic/racial background" category. Interestingly, the survey does not even include Blacks as a separate category. Instead, presumably Blacks are grouped into a catchall category of "other." This would seem to be another indication that the Black population is not well represented.

In reviewing data provided by Battelle on new hires, promotions, and terminations for FY 1999, a number of questions and comments are offered:

New Hires: The new hire rate for minorities of 15.8% seems reasonable. However, there were zero hires of black males in FY 1999, which is abysmal. One question that comes to mind is minority recruitment: how does Battelle incorporate diversity planning into recruitment efforts?

Terminations: It is not clear how the "churn rate" compares to length of service for diverse members of the workforce--is the high turnover rate observed in 1997 still evident? The 13.3% termination rate of minorities seems very high. Given that the hiring rate is 15.8% for minorities, it appears that only a 2.5% net gain is achieved from hiring--very low. The greatest portion of the terminated minorities are professionals--a concern. Likewise, the female termination rate seems high at 47.9%.

Promotions: The ratio of female promotions (169) to male promotions (184) is reasonable. The number of male and female minority officials, managers, and professionals receiving promotions seems low in comparison to non-minority candidates.

Miscellaneous: Does the new hire, termination, and promotion data reflect both the 1830 (government) and 1831 (private) contracts at the Laboratory?

Based on the above observations the Contractor's Diversity program is rated as Good for FY 1999.

1.4 Internal Audit

The Internal Audit organization successfully met the FY 1999 performance expectations. This included:

- 1.4.1 submitting an acceptable FY 2000 Audit Plan on time,
- 1.4.2 completing audits in accordance with Internal Auditors (IIA) standards,
- 1.4.3 accomplishing audits in accordance with their latest revised audit plan,
- 1.4.4 having full disclosure of all material conditions found,
- 1.4.5 achieving management's acceptance of audit recommendations,
- 1.4.6 completing OIG and GAO investigation referrals and information requests on time, and
- 1.4.7 submitting quarterly open action item reports within 15 calendar days after the end of each quarter.

The Director of Internal Auditing has also successfully maintained, well-qualified audit staff that have provided meaningful, well-written audit reports.

One area for improvement was noted regarding the utilization of a new electronic program. During FY 1999, PNNL Internal Audit started completing all of their audits using TeamMate, which is designed to specifically maintain electronic audit working papers. To provide some consistency, PNNL should work to establish a template for audit structure within their electronic working papers (TeamMate). The PNNL Internal Audit Director has acknowledged that there needs to be more consistency in how the working papers are established in TeamMate and he is taking action to correct this weakness.

Based on the above observations throughout the fiscal year Internal Audit is rated as Excellent.

1.5 Information Management (Records Management/Y2K)

Battelle has an Excellent Records Management program. The Contractor's standard filing system provides one single method for accounting for records throughout the Laboratory.

Throughout FY 1999, DOE RL had an almost daily interaction with the Battelle Y2K project team. In addition to this frequent personal interaction, an Independent Validation and Verification (IV&V) of the Laboratory Y2K system remediation was conducted. Also during FY 1999 the DOE HQ Chief Information Office (CIO) reviewed the Y2K remediation and contingency planning efforts of the Contractor. Battelle met (and in many cases beat) all DOE and Office of Management and Budget (OMB) completion milestones for remediation of mission-essential, business-essential, and safety-related systems. In addition to system remediation, the Contractor has met all established requirements for continuity planning, contingency planning, end-to-end testing, zero-day planning, drill participation, and system configuration control. As a result of Battelle's proactive Y2K project execution, DOE RL met

all requirements established by DOE HQ, OMB and Congress. The end result was that the Department received a 'B' grade in February from Congressman Horn's Subcommittee on Government Management, Information and Technology Committee on Government Reform. The Contractor Y2K project staff have been very responsive to status queries and requests for programmatic support from the DOE RL Y2K project coordinator. Battelle also was responsive to queries from stakeholders and other external entities such as the DNFSB, local media, DOE HQ and other field offices. The Contractor participated in public Y2K awareness symposia and worked cooperatively with the other site prime contractors to ensure that the overall Hanford site Y2K project was executed successfully and all identified risks were mitigated or minimized. Based on the above observations the Y2K project is rated as Outstanding.

1.6 Laboratory and Institutional Planning

Battelle continues to be a leader in Institutional Planning for the DOE complex and met or exceeded expectations of both DOE HQ and the Operations Office. Battelle has done an outstanding job in integrating the Critical Outcomes into the process as well as other business processes again exceeding expectations. Also the planning for and conducting of the FY 1999 On-Site Review was carried out with great expertise and professionalism. Based on overall operational awareness of the Institutional Planning process, DOE RL's evaluation of this area is Outstanding.

1.7 Life Cycle Asset Management

In July 1999 the Contractor put in place the Facility Acquisition and Disposition management system consistent with the program description submitted in April 1999. Battelle was required, under contract clause H-31 "Life Cycle Asset Management" to prepare and issue a Laboratory Life Cycle Asset Management (LCAM) Program Description Document. Consistent with the contract clause, the document was transmitted to DOE RL in April 1999. DOE RL reviewed the subject document, and determined that it describes a comprehensive, complete and appropriate method to plan, acquire, operate and maintain, and dispose of those physical assets needed for the laboratory to meet overall DOE mission objectives.

Implementation of LCAM requirements during 1999 has taken a big step forward. A review of Contractor's independent oversight report of April 1999 and the subsequent efforts for documenting and improving the components of that management system during the year reflect excellent performance. The Contractor has gone a long way towards improving the program through the development of a draft facility strategic plan, publishing of clear consistent requirements and records of decision for asset management. Areas for improvement from both the IO report and Management systems manager assessments remain including an enhancement of self-assessment validations to assure quality of LCAM deployment.

In support of the acquisition of assets through capital construction, the Contractor has developed a comprehensive project management program and procedures. This project management system follows the tenets of LCAM. The Contractor's management of DOE capital projects for FY 1999 has been excellent with all the projects meeting budget and scope baselines. An area of concern is schedule baseline compliance. Only 64 percent of completed projects were within schedule and 76 percent of on going projects are within schedule. This gives an aggregate average of only 71 percent (vs. a 90 percent goal) of the projects meeting their baseline schedule.

Based on the above the Contractor's overall LCAM program is rated as Excellent.

1.8 Emergency Management

Based on continued improvements, Battelle's Emergency Preparedness (EP) program is rated as Excellent. The Contractor has conducted an increasing number of drills and has conducted staff awareness verification walkthroughs; both of which have increased Emergency Preparedness awareness. Focus during FY 1999 was places on hazardous facilities.

The number of EP drills conducted was 10 in FY 1997, more than 20 in FY 1998, with 61 conducted in FY 1999. The sheer increase in drills has improved EP awareness because many more personnel are being involved in the drills. In addition to the increase in numbers of drills conducted, the drills are more diverse and comprehensive than in previous years. These improvements are excellent; however, significant improvement in FY 2000 is still desirable. Additional benefit can be derived from conducting drills if the Contractor better defines the drill processes by establishing policies, procedures, and/or guidelines for conducting drills and by improvements in training as follows:

- Define how drills are conducted. Management should document their expectations relative to scope, number, and follow-up to desired drills. This definition may allow facilities to run their own drills without EP being significantly involved.
- Development of a bank of scenarios. This also would allow conducting drills without the necessity of always involving EP. It would also better define desired responses to events.
- Training of the drill teams. This is needed for simulations to be defined and consistent across facilities and for consistent interaction methods to be defined between controller and those involved in responding to the drill.
- Establishing drill team membership. Most of the drills observed required key facility players to be part of the drill team so that coordinators would be knowledgeable. Additional depth to the drill teams is needed so that key facility personnel can also be involved in responding to drills.

The majority of the drills run involved full Building Emergency Response Organization participation. While this is contributing to EP goals, it is preventing involving a significant number of players in smaller, more likely scenarios. The elements listed above would assist in getting more value from the current drill program, and also add the ability to run lower level operational drills that touch more facility personnel in smaller numbers.

During FY 1999, staff awareness verification walkthroughs were conducted in nine buildings. Staff members from over 90 different organizations were interviewed and of the 245 staff interviewed 242 knew the correct response to the EP survey questions asked. This activity increased focus on EP, which resulted in improved EP awareness. This activity can be improved in FY 2000 by expanding the line of questioning to probe personnel awareness of actions that should be taken for a wider variety of events such as spills, injuries, or abnormal conditions.

Self-assessment, as it applies to the EP Management System still has not been defined, however, EP personnel have a commitment to define and improve EP self-assessment during FY 2000. Several of the FY 1999 activities involved elements of self-assessment, but since the self-assessment process has not been adequately defined, it is difficult to determine if the full benefits of self-assessment are being reached.

1.9 Scientific and Technical Information (STI) Administration

Battelle met its objectives to collaboratively develop and implement STI policies and procedures. Primarily, Battelle has met its obligations under the STI Order to provide STI in approved formats to the Office of Scientific and Technical Information (OSTI) in a timely manner. The Contractor continued to develop, and began to populate its database of externally available STI and tested automatic uploading to OSTI. STI staff actively and productively participated in the Hanford Technical Information Council as well as OSTI's meetings and conference calls. Based on the above the Contractor's STI program is rated as Excellent.

1.10 Technical Partnerships Administration

Battelle's performance has been Outstanding in the area of Technology Partnerships Administration by executing Cooperative Research and Development Agreements (CRADA) according to DOE mission, policy, guidelines and federal statutes. The success of the program is attributed to the Contractor consistently communicating and interfacing with DOE RL, investigating methods for streamlining the process, and pro-actively maintaining a constant awareness of any changes to CRADA policy or guidelines. Any significant issues, such as U.S. competitiveness, intellectual property, funding, ES&H or security, associated with the administering of the CRADA are expeditiously resolved.

1.11 Manpower and Personnel (Human Resources/Training/Worker Transition)

Human Resources/Worker Transition:

DOE RL agrees with the Contractor's assessment of the Human Resources (HR) management system, contributions to implementation of the customer service model and on the overall performance of operation. The review of the self-assessment in relation to the FY 1999 performance measures, revealed that the HR Directorate exceeded expectations thus earning an overall rating of Excellent. Notable accomplishments throughout the fiscal year, which led to the Excellent rating provided, includes but is not limited to:

- Development of successful HR programs, process and policies that enhance the Laboratory's ability to hire, develop, compensate and reward highly qualified individuals within appropriate guidelines.
- Development of strategic plans for human asset management in concert with the Laboratory's goals of providing qualified management and leadership that meets customer needs while assuring that work environments continue to foster staff satisfaction.

Development of the HR Agenda for tracking a variety of programs. As with HR projects, this is available to employees on the HR internal web page.

In essence, the HR Directorate's management system provides a unique system to track, enhance, and deliver products to appropriate parties. The proactive approach taken by HR has enhanced its capability for assessing and promoting all of its activities in Workforce Planning; Benefits Administration; Employee Programs; Training and Education; Performance Management and Rewards; Labor Relations; and Human Resource Information Systems.

Training:

The Contractor's Training and Qualification program is well developed, managed, and administered. They successfully employ a business model that allows them to keep track of all vital data related to effectively running a training department. The use of their web-based

Staff Development and Training Plan Tool has enabled them to accurately identify the required and desired training needs of every staff members, and ensure the training was completed in the required time frame.

The Contractor has made significant improvements in their training delivery by effectively employing new technology. They have used computer-based and web-based technology to provide alternative methods of training delivery for staff members, while ensuring that short term costs of development would generate an acceptable return on investment. Their self-assessment program is effective in identifying areas where improvement can be made. Furthermore, they have demonstrated throughout the year that they actually make changes in response to their self-assessments and follow up to ensure the changes addressed the original problems. Based on the above the Contractor's Training activities are rated as Outstanding for FY 1999.

1.12 Community Transition

Battelle's performance in the Area of Community Transition, Economic Development Support, has been Outstanding this year. This performance, primarily by staff of Battelle's Office of Economic Development (EDO), met or exceeded all of the Economic Development Performance Indicators (Objective 4.2). Specifically, Battelle helped create 10 new businesses and provided technical assistance to 63 eligible entities, with 90 percent of respondents to a survey regarding the quality of the assistance stating that they were "satisfied to very satisfied." This performance has and will continue to benefit the community through innovative technology transfer and the creation of new jobs. This Outstanding performance rating is consistent with Battelle's own rating derived in its Laboratory Level Self-Assessment. This fact is supportive of DOE RL's favorable view of the Laboratory Level Self-Assessment Program.

Regarding the Self-Assessment Program, DOE rates it Excellent. This excellent rating is based upon the following: (1) quality and timeliness of initial planning, (2) consistent inclusion of DOE representatives in assessment briefings (primarily to Battelle staff by Battelle management), (3) quality and timeliness of information provided in monthly meetings with DOE management and staff, and (4) quality of information provided in the end-of-year Self Assessment Report. These actions and communications resulted in DOE RL's being well informed regarding the status of the Critical Outcome performance indicators most of the time. Additionally, an intangible outcome brought about by this inclusiveness and communication of information was the development of close working relationships and trust.

DOE is very pleased with Battelle's performance during FY 1999, regarding both the Outcome performance indicators and on the self-assessment activities.

1.13 Work For Other (WFO) Administration

DOE RL is in agreement with Battelle's FY 1999 self-assessment of their WFO Program. DOE RL's evaluation is based on our daily oversight and knowledge of the Contractor's management of the WFO Program. Throughout FY 1999, DOE RL participated in monthly meetings with the Contractor that focused on 1) WFO issues and 2) training and reference guides for staff at the Laboratory to improve upon the deficiencies that were noted during the FY 1998 assessment. DOE RL's assessment is further based on our review and approval of all Contractor WFO proposal packages. Proposal package deficiencies were noted throughout the year in an electronic Laboratory/RL shared tracking system. DOE RL has also received and reviewed copies of the WFO technical customer surveys conducted by the Contractor.

DOE RL and the Contractor agreed to utilize the following performance objectives during FY 1999. These are the same objectives used in FY 1997 and FY 1998. The Contractor's FY 1999 assessment revealed the following:

1. Objectives 1 and 2: Quality and Timeliness of Project Deliverables and Transfer of Technology to Other Federal Agencies and Industry for Further Development and Commercialization (Excellent for both)

The FY 1999 technical customer surveys indicate that Battelle's WFO clients continue to be highly satisfied with the Laboratory's ability to deliver timely and high quality products, including the Laboratory's ability to transfer technology to the private sector. DOE RL agrees with the Contractor's assessment that there does not appear to be a negative trend that would require improvement other than to expand the survey to include a broader customer base.

2. Object 3: Proposals Received by RL Prior to Receipt of Funding (Excellent)

The Contractor has significantly improved in this area over the past two years. The deficiency percentage for FY 1999 has been reduced to 14 percent in comparison with 24 percent for FY 1998 and 36 percent for FY 1997. While DOE RL recognizes that this Objective is sometimes difficult to manage, the Contractor has identified areas to focus on that will continue to reduce this percentage in future years.

3. Object 4: Proposals Submitted to RL in a Complete Package (Excellent)

The Contractor has made measurable improvements in this area during the past year. The deficiency percentage for this Objective decreased from 20 percent in FY 1998 to nine (9) percent during FY 1999. The findings for this Objective were concentrated in one area (statements of work) as opposed to multiple areas during FY 1998. Some common statement of work issues are 1) not clearly detailing the completed scope on proposal amendments and identifying the technical description of the new effort, and 2) failure to address all the required components of a quality statement of work, i.e., deliverables and schedules. The Contractor has recommended actions in this area to continue the improvement results of this objective.

Strengths:

- Battelle conducted mandatory WFO training for all their Contracts staff.
- The WFO Resource Guide that is available via the Internet was enhanced.
- The Process Improvement Bunch (PIB) task force continued to meet monthly with DOE RL to review and address all WFO issues. As a result of these meetings and communications back to the Laboratory technical and administrative staff, DOE RL has noted that statements of work submitted to DOE RL are more clearly written and a much higher percentage of the proposal packages are submitted to DOE RL for approval prior to the receipt of funds.
- The Laboratory Onsite WFO Office provides a preliminary review of proposal packages that has resulted in higher quality packages

- The Contractor was responsive to requests throughout the year to meet the needs of DOE RL and HQ.
- The Contractor supported the development of a DOE RL/Laboratory shared electronic tracking system dedicated to WFO.

Areas for Improvement:

- Continue to work towards improving the percentage for proposals approved prior to the receipt of funding.
- Continue to work towards improving the percentage of proposals submitted to DOE RL in a complete and quality package.

Overall Rating:

Battelle reported an excellent rating in their FY 1999 self-assessment. However, the Contractor management and dedicated staff took positive steps during FY 1999 through mandatory staff training and communication through the PIB to achieve significant improvements in their performance objectives. Because of this and the Contractor's other strengths identified above, DOE RL's rating of Battelle's management of the WFO Program for FY 1999 is Outstanding.

2. TECHNICAL PROGRAMS

The DOE RL Science and Technology Programs Division (STP) performed a validation assessment of Battelle's Environmental Technology Division, National Security Division, Energy Technology Division, and the Environmental and Health Sciences Division, self-assessments. Based on the division level self-assessments evaluated by STP the overall Contractor performance on self-assessment at the technical program division level is rated as Excellent.

It was noted during this evaluation that all of the line organization are fully utilizing the Electronic Prep and Risk system. The laboratory has embraced the system and is continuing to upgrade the system to produce Project Management Plans and potentially Hazard Analysis.

ENVIRONMENTAL TECHNOLOGIES DIVISION

Overview:

STP formed a validation assessment of the self-assessment performed by the Contractor Environmental Technologies Division (ETD). The validation assessment was conducted from November 8-19, 1999, and included a review of ETD through various methods including:

- Performance Indicators (For Lab Level)
- DOE Daily Oversight
- Occurrences
- Self Assessment Reports
- Peer Review Report
- Meetings with ETD personnel
- Meetings with Management Systems Owners

The meetings with ETD personnel included the Technical Resource Managers, Operations Managers, and one product line manager. The Management systems that were reviewed included the Project Management System and the Environmental Services Management system.

Summary:

Generally the FY 1999 self-assessment process has improved over the FY 1998 self-assessment process. It was apparent that ETD is using the process and not just complying with it. It is being used as a tool to improve the operations of the Laboratory and ETD seems to be continually trying to improve the process. The rating for the Environmental Technologies self-assessment is Excellent.

Customer Value:

ETD is using the data that was generated from the Customer Surveys. The process of selecting critical projects varied from product line to product line, but there was agreement with DOE RL prior to the surveys. A difficulty this year was in the response rate of only 50 percent, which may have been due to replication of critical projects from last year, nonetheless, the responses were favorable.

Strengths:

A number of the product lines also had a random selection of projects to be surveyed which increased the distribution of projects to not just the large high visibility ones, but included some smaller projects. Although the score was the same as in FY 1998 the variability (standard deviation) was smaller which showed that the results were more accurate. As well as random selection of projects there was also a survey of additional clients done that was not required which helped substantiate the results.

Areas for Improvement:

The survey mechanism may need to be improved to increase the response rate and solicit more useful information. The interview process that was used this year in the performance indicators was a valuable process in getting useful feedback for improvement.

Business Processes:

An emphasis of this evaluation was to examine the relationships between ETD and other Contractor organizations/Divisions. This evaluation also focused on how the division handled occurrence reporting and follow through, especially the events at the Marine Sciences Laboratory. In general there was a positive response to the services that were provided and all of these organizations were open to feedback from ETD.

Strengths:

Teaming with support organizations to accomplish a goal and working to eliminate organizational barriers was very positive. Furthermore, ETD is providing constructive criticism to improve on systems such as the Program Management Plan generator and automating the Hazard Analysis process by tying it to the Electronic Prep and Risk system.

The Laboratory is a matrixed environment and could potentially be difficult to operate under. ETD seems to have looked beyond these difficulties and capitalized on this structure. The product lines view their resources as not just ETD staff and facilities but capitalize on the resources of the entire laboratory to accomplish their strategies.

There were a number of events at the Marine Sciences Laboratory in FY 1999. After discovery of the salinity measurement event, STP feels that the contractor acted appropriately and with haste to rectify the event. All actions from, reporting, to investigation, to informing clients and disciplinary action should be commended.

Areas for Improvement:

There seems to be an increased need for emphasis on Hazard Analysis. The Laboratory is looking at new automated systems to complete this process, however, there continues to be a perceived link between the occurrences and the hazard analysis.

Leadership:

The leadership of the ETD Division in FY 1999 was weak in many areas. There was a definite impact on the operations of ETD due to the absence of key management individuals within the organization focusing on Battelle Corporate activities rather than the Laboratory. Key management was not present at many meetings and the leadership was left in the wings. Even though those that were asked to fill in did step up to the task at hand there was a significant impact.

Another area of leadership is scientific and technical excellence. Overall the ETD division does show leadership in the Environmental Quality arena; however, the incident at the Marine Science Laboratory involving “dry labbing” some measurements that affected the credibility of the of the laboratory as a whole, not just ETD. The incident was a deliberate noncompliance with procedures by some individuals that are unacceptable in a National Laboratory environment. The contractor did handle the investigation and incident appropriately after discovery.

Strengths:

Although there was management inattention to the laboratory, capable individuals were selected to fill in temporarily to act on senior management’s behalf. Since the recent assignment (Sept. 1999) of a new Associate Lab Director for ETD there has been a marked improvement in partnership/trust between ETD and DOE RL.

Areas for Improvement:

Key individuals within the division and laboratory were inattentive to the operations and activities of the laboratory due to Battelle Corporate activities such as proposal development. This inattention was very noticeable within ETD. Furthermore, the departure of many individuals to other locations was taxing to the division. There was a noticeable lack of direction due to individuals only operating in an acting capacity. The Division Review Committee process also recognized this. There was also a clear indication of uncertainty within the division.

In addition there was a lack of trust and partnership between the contractor and DOE RL that was very noticeable at the upper management level. This can definitely be seen by the lack of inviting DOE RL to sit in on the entire Division Review Committee closeout session, as well as dissuading DOE RL from attending the Division Review Committee. DOE RL was present at all other Division Review Committee’s at the site. Notwithstanding the above, ETD was the first division to release the results of the Division Review Committee to DOE RL.

National Security Division

Overview:

The Science and Technology Division conducted a validation of the self-assessment performed by the Contractor National Security Division. The validation assessment was performed by reviewing applicable documentation and interviewing members of the National Security Division management team.

Summary:

This was the third year for National Security Division’s self-assessment program. It is evident that NSD is integrating self-assessment into daily operations and using assessment results to drive improvements. The improvement in the program continues to be a positive trend with room for improvement. The rating for the National Security Division is Excellent.

Strengths:

The National Security Division's Management Team's continued acceptance and participation in the program remains a strong indicator of a healthy, emerging program. It is evident that self-assessments are being integrated into and analysis support the divisions daily operations.

The National Security Division is using results from their self-assessments as well as information from other divisions, management system owners, DOE RL evaluations and external assessments to identify and implement further assessment and improvement actions to address strategic objectives.

Areas for Improvement:

In light of the changing DOE RL point of contact for the National Security Division in Fiscal Year 1999 and for some time in Fiscal Year 2000, extra emphasis needs to be placed on informing and involving DOE RL in the National Security programs and operations.

It is evident that actions are being taken to look at the division's travel and assessment of performance in this area is identified in the FY 2000 self-assessment plan. With the mandated target from congress on laboratory travel costs this is an area that needs attention in order to reach its targets without severe impact to meeting program goals and objectives.

This evaluation reinforces the need to focus on opportunities for improvement identified in the National Security Division FY 1999 Self-Evaluation, dated June 10, 1999 specifically with respect to identifying a "distinctive Technical Signature for the Division."

ENERGY TECHNOLOGY DIVISION

Overview:

STP formed a validation assessment of the self-assessment performed by the Contractor Energy Division. The validation assessment was conducted from November 8-19, 1999, and included a review of the Energy Division through various methods including:

- Performance Indicators (For Lab Level)
- DOE Daily Oversight
- Self-Assessment Reports
- Peer Review Report
- Meetings with Energy personnel
- Meetings with Management Systems Owners

The meetings with Energy personnel included the Technical Resource Managers, and the Operations Manager. The Management systems that were reviewed included the Project Management System and the Environmental Services Management system.

The Division has based their self-assessment structure on a balanced scorecard approach (see "Balanced Scorecard" by R.S. Kaplan and D.P. Norton). This approach covers all aspects of a quality institution although from a different angle as that in the Contractor's Integrated Assessment Program (IAP) Framework Criteria. The four quadrants that the Contractor focuses on in their self-assessment are the following:

- Customer Satisfaction/Value
- Resource and Leadership Development
- Operating Systems Performance
- Business Performance

This review used the same four areas to focus the evaluation.

Summary:

Generally the FY 1999 self-assessment process is very well done, however, there remains some areas for improvement. It is apparent that Energy is using the process and not just complying with it. The process is being used as a tool to improve the operations of the Laboratory and the division seems to be continually trying to improve the process. The interactions between the Energy Division and STP staff have been exceptional throughout the year. The rating for the Energy Division self-assessment is Outstanding.

Customer Satisfaction/Value:

This section includes the annual customer survey, the customer satisfaction survey, DOE HQ interviews and the Division Peer Review.

Strengths:

The process used by the division and the data collected is very valuable. The division has identified its areas of concern and is actively addressing those areas.

The interview process with DOE HQ (Performance indicator 1.4.5) was more valuable in the feedback that was obtained than the actual score that was received. The division is planning on continuing this process between DOE HQ, DOE RL, and the Laboratory.

It is obvious that there is a partnership type relationship that is building between the Energy Division and STP that is very appreciated.

Areas for Improvement:

The Peer Review or Division Review Committee (DRC) results were not well represented in the overall summary in the Annual-Self Evaluation Report. Areas for improvement identified in the closeout meetings with the DRC were not evident in the summary report. The actual peer review report identifies many areas for improvement, which could have been easily included in the summary without compromising business sensitive information. The Energy Division does recognize that there are areas for improvement and seems to be working towards responding to the DRC findings.

Resource and Leadership Development:

The focuses covered under this area are in technical leadership and staff resources and their development, retention and management.

Strengths:

In many cases there are areas where the division felt they needed more data, such as the Quality of Work-life Survey, and they are in the process of collecting more information and getting at the root of the issues. The Technical Resource Managers seem to be doing an excellent job at staff development and mentoring at certain levels, as well as defining key/critical hires that are necessary to further develop the division's capabilities.

Areas for Improvement:

The indicators used in this focus almost solely on the staff resources. There needs to be more indicators on actual technical leadership of the division. The two indicators on conference chairs

and invited lecturers and intellectual property are good ones, but does not give a real feel for the technical leadership that the Laboratory has in the four Energy thrust areas. Other areas to consider including may be publications, staff holding key positions in professional organizations (e.g. IEEE, ASME, etc.), impact of technical contributions, etc. This was also an area that the Peer Review noted as an area for improvement.

Operating Systems Performance:

The indicators in this section focus on the operating and management systems used for and by the Energy Division as well as those the Energy division administers for the entire laboratory. The indicators represented here are good as well as the performance achieved.

Strengths:

The Energy Division did an excellent job at evaluating their performance in this area. Representative indicators were chosen and tracked and the level of performance achieved was in general at or above expected values. It was noticed that video conferencing had increased markedly over last fiscal year, 237 hour versus 192hours in FY 1998 although the target for FY 1999 was only set at 110 hours.

Areas for Improvement:

Continue to measure the indicators in this area. The Energy Division should consider adding a few indicators on complying with other management systems within the laboratory such as the Project Management System. It is recommended that the division consult with management systems owners in this regard and only include as it makes sense.

Business Performance:

The indicators identified under his area are also appropriate for evaluating performance in the business area.

Strengths:

There was a good increase in sales. It was not only above expected, but it exceeded the best possible expected. There also seems to be a good return on investment of PDM expenditures.

Areas for Improvement:

There appears to be a significant decrease in intellectual property income over last year. It is also confusing why targets were never set in this area. Percent time on project (Energy Self-Assessment indicator BP 3.2) was below target, due to an increased emphasis on recruiting. It is also recommended that the contractor measure travel indicators for FY 2000.

ENVIRONMENTAL AND HEALTH SCIENCES DIVISION

Overview:

The DOE RL Science and Technology Programs Division (STP) has validated the FY 1999 Self-Assessment of the Environmental and Health Sciences Division (EHSD) by performing staff interviews and reviewing the following:

- the EHSD FY 1999 Self-Evaluation
- the laboratory FY 1999 Performance Evaluation Agreement with DOE RL
- the Office of Science FY 1999 Laboratory Ratings
- the Peer Review Results
- the Scientific Excellence Year-End Report (awards, invited talks, and committee service)
- EHSD Updates
- EMSL User Satisfaction Survey
- Cumulative EMSL User Demographics Report

- EMSL User's Peer-Reviewed Publications Report
- ARM User Satisfaction Data

Summary:

EHSD has used the self-assessment process to outstanding effect by devoting significant staff and resources to monitoring performance and implementing improvements in an already strong and visionary organization. Additionally, EHSD is to be specially commended for their partnering with the DOE RL Science and Technology Programs Division in nearly every aspect of the self-assessment process.

Strengths:

EHSD has provided high quality, relevant and impactful science to its customers in FY 1999. The Environmental Molecular Sciences Laboratory (EMSL) user facility continues to impress users and visitors alike with its impressive array of instrumentation and the high quality of staff, for example. Also, the Environmental Health Initiative is a visionary and important new development for EHSD at the cutting-edge of science.

Several highlights of the EHSD self-assessment program include: 1) Implementation of a "climate for innovation" survey designed to solicit more focused and actionable information from staff regarding how to create/enhance an environment that fosters creativity and excellence. 2) Implementation of a self-assessment format and approach that ensures that the full plan, do, check and act cycle is addressed, and that relevant conclusions also feed directly into Lessons Learned. 3) Implementation of the EHSD Update as a mechanism to share accomplishments, etc across the Division (and with DOE RL).

Areas for Improvement:

For the third year in a row the Laboratory has received its lowest scores from the Office of Science in the area of Program Management. The Atmospheric Radiation Measurement (ARM) and the Materials Sciences programs in EHSD were specifically mentioned. The most common criticism noted in the EMSL User Survey was the need for a close-by dormitory. The low ratio of publications to users in EMSL is rather curious.

3. ES&H/OPERATIONS

Summary:

The framework required by DOE P 450.5, Line Environment, Safety and Health Oversight, is in place and includes regular interaction with DOE RL. There is also a good balance between contractor, DOE, and other external oversight interactions. The integrated assessment program is capable of uncovering weaknesses in performance (e.g., compliance). This point is evidenced by the fact that the contractor has identified most, if not all, issues prior to that of external sources.

However, there are also areas for improvement. Self-assessments need to be better connected to overall strategy. Varying levels of maturity across management systems exist regarding their ability to assess deployment. There is a need to improve the ability to prioritize and respond to identified opportunities for improvement. There is also a need to improve the integration of assessment results from multiple Self-Assessment plans as well as to improve the integration of the performance of assessments. Finally, the partnership between DOE RL and Battelle must continue to improve. DOE RL's development of an appraisal plan early in the fiscal year, working in close conjunction with the contractor, can further the effectiveness of ES&H oversight.

The process used this year to establish a consolidated laboratory-level position on key vulnerabilities based on FY 1999 assessment results is noteworthy. The resulting six areas

identified for improvement appear appropriate and consistent with the concerns identified through the DOE assessments. Although this activity is not currently defined in the integrated assessment program, it represents a positive step toward rolling up performance feedback data to the institutional level. Because this process is not part of a defined system, the next steps to disposition the identified six areas for improvement is unclear.

The Laboratory should develop corrective action plans for each of the six areas identified for improvement. There are currently some actions being taken which are necessary to address the concerns, however, the existing actions may not be sufficient nor adequately integrated to result in the necessary improvements.

Discussion:

This report summarizes and serves as an assessment of how Battelle, has implemented the key elements contained in DOE Policy 450.5. DOE P 450.5 sets forth the Department of Energy's expectations for DOE line management environment, safety and health (ES&H) oversight and for the use of contractor self-assessment programs as the cornerstone of that oversight.

1. Self-Assessment Program Description

The Integrated Assessment (IA) program is the Contractor's approach to performance management. Self-assessment is one of the key elements of the IA. The IA is designed to encourage scientific, operational, and business excellence, through self-assessment, strengthening of the line management and their accountability for scientific excellence, safety, cost effectiveness and customer satisfaction. The changes made to the IA program this year had a positive impact on improving the systematic, integrated management approach. A key element in the success of the IA program is regular interaction with DOE RL.

(a) Performance measures and indicators:

FY 1999 Critical Outcome 2.0 was Operational Excellence (see DOE/RL-98-60 for full text of Agreement). One objective under Operational Excellence was to "Sustain and enhance operational excellence in safety and health, and environmental protection." Progress toward achieving the objectives and outcomes specified, is reported at a minimum, on a quarterly basis to DOE RL.

(b) Line and independent evaluation:

A variety of evaluations were conducted throughout the year to determine or verify Battelle's performance. Critical Outcome Indicator 2.1.1.1, "Worker involvement, knowledge, and culture relative to ES&H," included a requirement that DOE RL and a representative of Independent Oversight be invited to verify that the indicator was being implemented correctly and that the results were being used to correct and/or improve performance.

Additionally, Independent Oversight identified 15 external oversight reports (8 were by DOE RL, 1 was from the DOE SC, 1 was by EH-2 Office of Oversight, and 1 was by the Defense Contract Audit Agency) and provided a draft summary of crosscutting issues in the year-end Self-Evaluation Report. The contractor, as well as, DOE RL, used the results of external assessments to determine if systemic issues exist that warrant attention and correction. Finally, DOE RL participated in selected Contractor self-assessments.

(c) Compliance to applicable requirements:

Compliance to applicable requirements is addressed in a variety of fashions within the contractor's integrated assessment program. Several indicators within the Critical Outcomes indicate the degree of compliance that exists. For example, the performance under indicators 2.1.1, 2.1.2, 2.1.3 and 2.1.4 of the critical outcomes can indicate the

degree to which Contractor staff comply with Personal Protective Equipment, procedures, training, Chemical Management System, Satellite Accumulation, and general worker safety requirements. Actions were initiated during the year to establish a process for improving the relevance of contract requirements and maintaining their currency.

(d) Data collection, analysis, and corrective actions:

The use of tools such as Occurrence Reports, Radiological Problem Reports, Quality Problem Reports, Action Tracking System and the self-assessment process provide for collection of data. The level of analysis appears to be inconsistent across the Laboratory. The action taken to provide a systematic analysis of FY 1999 self-assessment results to identify laboratory-level issues or areas of vulnerability is noteworthy and should be continued. However, it is not clear what corrective actions are in progress or being planned to address the identified issues.

(e) Continuous feedback and performance improvement:

Continuous feedback and performance improvement is a critical aspect of the self-assessment program. Regular reporting of progress occurs with both Critical Outcomes and self-assessments. The status of Critical Outcomes and Division/Directorate level self-assessments are reviewed quarterly with DOE RL. A year-end evaluation of contractor performance, including improvement opportunities for the future was provided to the DOE RL. Each Division and Directorate interfaces regularly with their DOE RL counterpart to discuss performance, significant accomplishments, and improvement opportunities identified through implementation of their self-assessment program throughout the year. Some improvements have been identified to strengthen the implementation of management system performance and integration. Implementation of system requirements and flow-down to the bench top is an area for continued improvement.

2. Field Element Oversight

(a) Operational Awareness:

Reportable Occurrences:

Several reportable occurrences reflect the need for the contractor to continue improvements in implementation of Integrated Environment, Safety, and Health Management (IES&HM).

- During a DOE RL walkthrough of PSL, DOE RL personnel identified that the highly toxic chemicals in PSL were in excess of the chemical limits established by the Facility Use Agreements (FUA). This resulted in a reportable occurrence (See occurrence report RL-PNNL-PNNLBOPER-1999-0018) which identified a broad range of deficiencies where the facility authorization envelope conditions were not being met. The extent of the issue was determined to be wide spread and involved most Laboratory facilities. Actions to address the issues were timely and admirable, however, the issues identified are reflective of a significant shortfall in performance relative to operation within the analyzed authorization envelope. This significant occurrence reflects the need for improvements relative to IES&HM core functions “define the facility scope of the work” and “perform the work within the authorization agreement”.

- Several off-normal occurrences during FY 1999 reflect weaknesses in adequate hazard identification and analysis during the work planning or work changing processes. The 6 occurrence reports are list below:
 1. RL--PNNL-PNNLBOPER-1998-0022, 329 Soil Vessel Rupture
 2. RL--PNNL-PNNLBOPER-1998-0023, PSL Pb Exposure
 3. RL--PNNL-PNNLBOPER-1999-0010, 326 Beryllium Exposure
 4. RL--PNNL-PNNLNUCL-1999-0004, Co-60/Sb-125 speck found on 400 hallway carpet
 5. RL--PNNL-PNNLNUCL-1999-0004, Clothing Contamination, Rm. 55 furnace
 6. RL--PNNL-PNNLNUCL-1999-0007, Pure Co-60 speck on RCT shoe

These events led DOE RL to conclude that the Contractor needs to improve its hazard identification process. Each of the six occurrence reports listed either identifies an issue with incomplete hazard identification/control or reflects a problem in hazard analysis. The final occurrence reports did not identify corrective actions that adequately address the hazard identification, analysis, and control deficiencies.

The Contractor presented to DOE RL a plan to improve the hazard identification and analysis process at the project level. The plan is scheduled for full implementation over the next 2-4 years. DOE RL looks forward to improvements in hazard identification and in full implementation of this process. We encourage the Contractor to strive for a shorter implementation period. Moreover, we look to Battelle for additional assurance the mid-project scope changes will not escape the hazard analysis process.

Critique Process:

The critiques observed by the DOE RL Science and Technology Division (STO) staff were generally timely, thorough, and effective in assisting the response to and establishing corrective actions for events. While events in other portions of the Laboratory have been well critiqued, others have not been. The difference is somewhat based on the experience and personalities of individuals involved. STO encourages capturing the quality elements of the RPL critiques and spreading that throughout a greater population of managers and team leads in the Laboratory. Development and implementation of training in this area could be very beneficial.

(b) Performance Against Performance Indicators and Self-Assessments:

The evaluation/validation of performance against Performance Indicators and Self-Assessments is presented within Section II, Critical Outcome 2.0, of this report.

(c) Readiness Assessments/Safety Management/Authorization Basis:

Facility Safety

Performance Highlights are identified below:

- A partial conduct of operations assessment was performed on the Radiochemical Processing Laboratory (RPL) on April 21 – 26, 1999. The assessment found that the RPL is generally in compliance with the requirements of DOE Order 5480.19, Conduct of Operation. One significant Finding was identified: the level detection systems for the High Level Radiochemistry Facility slab tanks (W-1 and W-3) are not operating properly resulting in a questionable tank liquid level. The liquid level information is important in demonstrating regulatory compliance in monitoring

hazardous waste. Actions to resolve this Finding during FY 1999 have been slow due to regulatory interpretations.

- Successfully conducted two readiness assessments, one for decommissioning of the Neutron Multiplier Facility (NMF) and one for modification and use of the new Radioactive Liquid Waste System (RLWS).
- Developed, reviewed and gained DOE RL approval of the Radiochemical Processing Laboratory (nuclear facility) Fire Hazards Analysis (FHA).
- Developed the 1999 SAR update which incorporates the FHA, enhances worker safety, identifies safety significant systems, structures and components and converts the Operational Safety Requirements to Technical Safety Requirements.
- Developed chemical basis documents to establish and justify the Facility Use Agreement chemical limits for contractor facilities.
- Performed fire protection assessments for 12 contractor facilities.
- Planned and conducted self-assessment activities resulting in some areas of improvement.

Strengths:

- The Laboratory has functional programs in Criticality Safety, Fire Protection, Nuclear Safety including Unreviewed Safety Question evaluation, and Operational Readiness Review.
- The use of mockups was the most significant contributor to the smooth performance of the 329 Facility Neutron Multiplier Facility (NMF) deactivation. The NMF deactivation was accomplished during July and August of this year. This job involved significant planning and a true potential for excessive exposure of personnel to radiation as the core was removed from its pool, transported to RPL, disassembled, packaged, and shipped from the site. Activity planning involved a significant amount of realistic mockup time for the development of the methods, procedures, and training of involved staff. DOE RL STO believes that the use of the mockups was the most significant contributor to the smooth performance of this activity. While significant issues were being worked up to the day prior to authorization of the activity, STO recognizes the performance of this task as very well planned and executed, and worthy of noting.
- The RPL has established and deployed an activity authorization process that enhances facility safety through technical review of work including facility safety documentation and hazard identification and control.

Areas for Improvement:

- The Operational Readiness Review (ORR) and Readiness Assessment (RA) process should be further defined and developed as follows:
 - Implementation of new series Order 425.1, Startup and Restart of Nuclear Facilities tailored to be effective for both Laboratory nuclear and non-nuclear activities.

- Better definition of when an ORR/RA will be preformed.
- Improved definitions of the roles and responsibilities associated with readiness preparation and readiness verification. During the RLWS readiness preparations, it was difficult determining responsibility/accountability relevant to management self-assessment of the RLWS preparations prior to commencing the Readiness Assessment.
- Readiness Assessment issues were not thoroughly addressed prior to closure. This resulted in unresolved issues prior to DOE RL authorizing to proceed. Two examples follow:
 - Following readiness assessment of NMF deactivation work, weaknesses were identified in the documentation of the basis for the activity being a less than Category 3 nuclear activity.
 - Following readiness assessment of the RLWS, weaknesses were identified in tracking hazardous chemicals and waste within the desired limits as established by the Facility Use Agreement.

Self-assessment as it applies to the Facility Safety Management system is effective. Self-assessment activities are planned and conducted resulting in some areas of improvement. Improvements can be made through involvement of more personnel in the self-assessment activities both within the facility safety organization and without. Benefit could be gained by increased peer evaluation of the facility safety elements, including fire protection, nuclear safety, criticality safety, readiness review.

(d) Periodic Appraisal:

The annual appraisal of Battelle's FY 1999 ES&H operational performance was conducted in accordance with guidance found in DOE Policy 450.5, "Line Environment, Safety and Health Oversight."

Purpose and Scope:

The intent of this appraisal was to examine the Contractor's self-assessment effort related to several key management systems to determine if the Contractor is following the system requirements and consistently using the tools and executing the processes and procedures identified in the Standard Bases Management System (SBMS). Over the past three years objective evidence has been obtained through oversight activities that indicates key elements which specifically support the Integrated Environment, Safety and Health Management System have not been consistently followed and performed according to the requirements in SBMS. Therefore, this appraisal focused on reviewing and analyzing the Contractor's self-assessment effort within the Quality and ES&H Directorates to determine what, if any, objective evidence was available that would confirm whether the requirements in the supporting management systems are being consistently followed.

Overall Conclusions:

The appraisal confirmed that there is a Contractor self-assessment program functioning within the Laboratory based on the review and analysis of the ES&H and Quality organization's self-assessment processes. The appraisal also determined that the self-assessment plans and reports were prepared by organizations within the Laboratory in direct response to the Critical Outcomes identified in the annual performance agreement.

However, the appraisal noted that the self-assessment plans and reports prepared by ES&H and Quality organizations in FY 1999 did not provide objective evidence that would show the SBMS requirements, processes, and procedures are consistently followed.

Areas for Improvement:

Based on the results of this review and the objective evidence obtained through DOE oversight activities during FY 1999, the Contractor does not consistently follow the system requirements, use the tools, or execute the processes and procedures identified in the SBMS. The Contractor's self-assessment process does not provide adequate objective evidence to assure Integrated Safety Management requirements are consistently implemented for each activity.

Discussion:

DOE Policy 450.5 states that "DOE line oversight and contractor self-assessments together ensure that field elements and contractors are adequately implementing the DOE Safety Management System." It also commits DOE and its contractors "to technically sound, safe and cost effective operations supported by solid management systems that ensure protection of the public, the worker, and the environment." With respect to Battelle, these policy statements translate in contractual terms to implementing the Integrated Environment, Safety, and Health (IESH) Management System and other supporting management systems within the Laboratory. The policy also identifies key elements of a line ES&H oversight process.

Compliance with applicable requirements, in terms of the Battelle management and operating contract, consists of several separate, but related processes. First is a process that captures and maintains the appropriate requirements in the contract. Second is a process that translates the requirements into appropriate SBMS items and develops the systems, tools, and methodologies necessary to implement the SBMS. Third is a process that determines whether the Laboratory is consistently executing the processes defined in the SBMS as designed. The final process continuously evaluates whether the actual execution of the system produces results that are consistent with the design intent of the overall system requirements. All these processes are connected through an overall feedback and improvement process. Satisfactory execution of the first three processes is required to attain a Maturity Level of 2 as defined in Section 2.0 of the "Quality Directorate Maturity Assessment Process and Results," dated September 1999. The final two processes support Maturity Levels 3 through 5.

IV OTHER NOTABLE OBSERVATIONS

DOE Headquarters Offices Evaluations

1. Office of Fossil Energy

The Office of Fossil Energy funded two projects for Solid Oxide Fuel Cell research and development during FY 1999 and rated the overall performance as Outstanding. The Contractor exhibited a professional level of innovativeness, originality, and creativity. The research productivity was substantial and the eleven publications submitted were considered high for one year's work. They also cited that the management of this program has been aggressive and proactive. Among the best in the Solid Oxide Fuel Cell Technology Program. See Attachment 3 for the response provided by the Office of Fossil Energy.

2. Defense Programs

In the Commercial Light Water Reactor (CLWR) Project of Defense Programs, the Laboratory is assigned responsibility for the design, development, licensing and regulatory support of the Tritium Producing Burnable Absorber Rod (TPBAR) concept; and procurement of components of a TPBAR that will be irradiated in one or more commercial nuclear reactors licensed by the Nuclear Regulatory Commission. The Laboratory is also assigned Project responsibility for the science and modeling of the performance parameters for the Tritium Extraction Facility (TEF). As the designer of record for the TPBAR, PNNL developed a TPBAR that has been accepted by NRC for a Lead Test Assembly (LTA) demonstration in the Watts Bar Nuclear Station. The successful engineering development and demonstration of the LTA TPBARs, in large part, contributed to the selection of the CLWR Project as the primary tritium source for the Department of Energy. The Laboratory's contributions to the CLWR Project include: science for the understanding of the TPBAR operation; engineering analysis and specification; limited production of prototype TPBARs; regulatory licensing and documentation; and testing to validate the design of the TPBAR and development of the extraction parameters for the TEF.

The Laboratory has performed, generally, in an overall Excellent manner. It has met key milestones and generated a database of information on the TPBAR design and TEF extraction processes. This database will be carried forward to the next phase of the CLWR Project as it moves out of the design and development phase into large-scale fabrication of TPBARs and completion of design and construction of the TEF. See Attachment 4 for the response provided by Defense Programs.

3. Office of Nuclear Energy, Science and Technology (NE)

Overall Battelle's performance in support of NE programs is rated Excellent. In support of the Fast Flux Test Facility Program the Contractor was thorough and timely in completing the "Program Scoping Plan for the Fast Flux Test Facility" and Contractor management is complimented for their professional job in presenting the Scoping Plan to the NERAC. Battelle performed limited work for the Isotope Programs in FY 1999. Performance regarding customer interface for sales of yttrium-90 and transition and support of the privatization of Y-90 to the private sector was excellent; however, production cost for processing Y-90 did not reflect a decline in expenses due to increases in volume as was anticipated. See Attachment 5 for the response provided by the Office of Nuclear Energy, Science and Technology.

4. Air Force Information Warfare Battellab

The Air Force Information Warfare Battellab extended their appreciation for the outstanding services provided by the Laboratory Software Agents for Operations Security (SAFO) stating that the team's innovative ideas, spirit, and excellent skills are a great resource and reflect highly on the capabilities of Battelle. The SAFO concepts were both innovative and very timely, directly addressing not only the Air Force need, but more importantly, a DoD need as expressed to all the services and agencies by the Deputy Secretary of Defense. See Attachment 6 for the response provided by the Air Force Information Warfare Battellab.

DOE Richland Operations Office

1. Neutron Multiplier Facility (NMF) Deactivation

The 329 NMF facility was deactivated during July and August of FY 1999. The successful completion of this job involved a significant amount of planning and it had a potential for excessive radiation exposure of personnel as the core was removed, transported to the RPL, disassembled, packaged, and shipped off site. Planning involved a significant amount of realistic

mockup time for the development of the methods and procedures for the activity and training of involved staff. DOE RL believes the use of the mockups was the most significant contribution to the smooth performance in carrying out this task. While some significant issues were still being worked up to the day before authorization of the activity was provided, DOE RL recognizes this task was very well planned and executed and worthy of notation.

2. Validation of EM-30 Program Deliverables

Introduction and Background:

The DOE RL Science and Technology Division (STO) validated the Contractor deliverables for the EM-30 Program by using the approved FY 1999 Multi-Year Work Plan (MYWP), modified via approved change requests, as the criteria for the review. The DOE RL and Field Office milestones in the MYWP constitute the set of deliverables that required validation. Two STO groups participated in the validation. The first group reviewed deliverables regarding Program Management, Environment Compliance Technical Support Services, and Effluent Management. The second group reviewed deliverables regarding Facilities Surveillance & Maintenance, Essential ES&H Drawings, Waste Operations and Management, and Legacy Waste.

Validation Results:

The six deliverables in Program Management were completed on or ahead of schedule. There were no problems with the validation of the deliverables. Of the five milestones in Environmental Compliance and Technical Support Services, three were completed early and two were completed late. Although there were no impacts associated with the late milestones, establishment of future milestone due dates should coincide more with the permit expiration date.

All Effluent Management milestones were completed on schedule or in some cases ahead of schedule (Discharge Monitoring Reports). In Facilities Surveillance & Maintenance all five milestones were completed on or ahead of schedule. The evaluation of the deliverables indicated that they were accomplished in a very satisfactory fashion. In particular, the on time delivery of the FY 1999 Update of the RPL SAR was of very high quality. All Essential ES&H Drawing milestones were delivered on or ahead of schedule.

In Waste Operations, seven of the nine milestones were completed on schedule, with two ahead of schedule (Completion of PDP and Annual Update of Waste Policies and Procedures). According to milestone "Install and Setup Two New Treatment Technologies," the required technologies were set up. However, further work is required in the process for applying the chemical to achieve the level of decontamination necessary to release the lead bricks for reuse. In Legacy Waste, two of the five milestones were completed on schedule, two ahead of schedule (Completion of PDP and NMF Core Disassembly and Waste Packaging Complete) and one was late, which did not impact the NMF core removal schedule.

Summary of the Validation:

Out of 37 DOE RL and FO milestones established for FY 1999, 34 were completed on or ahead schedule and three were late with no impact.

Re-engineering Concern:

There was no milestone established for waste management re-engineering, however, this task included two deliverables. The first one was not met, which was to have the P2 charge-back system in place for FY 2000. However, a new due date for completing this deliverable is now January 1, 2000, and the 5% charge-back fee will be retroactive to the beginning of FY 2000. The second milestone was to prepare a draft Implementation Plan describing the cost recovery options. The draft did not meet expectations identified in the Change Request to address alternatives and options including charge back to facilities, divisions, or projects.

**BUSINESS MANAGEMENT OVERSIGHT
REVIEW REPORT
FOR
BATTELLE
PACIFIC NORTHWEST NATIONAL
LABORATORY**

NOVEMBER 1999

**PREPARED BY THE
U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE**

**U.S. DEPARTMENT OF ENERGY (DOE)
RICHLAND OPERATIONS OFFICE (RL)
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)
NOVEMBER 8-23, 1999**

EXECUTIVE SUMMARY

INTRODUCTION

In accordance with DOE O 224.1, "Contractor Performance-Based Business Management Oversight Process," the annual Fiscal Year (FY) 1999 multi-discipline business management review of PNNL was conducted by RL business management specialists during the period November 8-23, 1999. This report presents the results of that review.

This performance-based business management oversight process (BMOP) is an enhanced approach to management, is grounded in the concepts of total quality management, and fully supports the President's initiative to reinvent Government to make it more effective and cost efficient. The objective of this approach is to implement a system that encourages and rewards excellence and continuous improvement, and fosters improved and timely communication.

The BMOP provides that one multi-disciplinary business management review of each contractor may be conducted annually. Additionally, the BMOP provides that the contractors will conduct a self-assessment in the business areas based upon mutually agreed-upon, predetermined performance objectives, measures, and expectations. Intervening reviews will not be conducted except on a "for cause" basis.

OBJECTIVE AND SCOPE OF REVIEW

The fundamental goal in conducting the review was to verify and validate PNNL's self-assessment of business management performance objectives, measures, and expectations agreed upon by RL for FY 1999. The scope of this review, however, was not limited to the review of PNNL's self-assessment.

Functional areas selected for review included Budget, Finance, Personal Property Management, Procurement, Security (addressed in Appendices 5 - 7) and Classification/Declassification.

RL elected to not examine the following business management activities during this review: Administrative Services, Diversity, External Affairs, Human Resources, Information Management, Energy Management, Laboratory Institutional Planning, Life Cycle Asset Management (LCAM), Emergency Management, Records Management, Scientific and Technical Information Administration, Technology Partnerships Administration, Training, Worker and Community Transition, Work-for-Others Administration, and Legal and Patent Services.

REVIEW METHODOLOGY

The overall model for the BMOP is to combine RL operational awareness and the annual onsite review with an effective PNNL self-assessment to provide a reasonable assurance of acceptable business practices. The cornerstone for this model must be well-defined objectives, measures, and expectations that “drive the business.” RL determines success through “daily” operational awareness of PNNL’s activities, self-assessment, and the annual onsite review. The combination of these activities is intended to provide reasonable assurance of effective and efficient business practices.

The primary focus of the review was to verify and validate PNNL’s self-assessment against predetermined performance objectives, measures, and expectations, although some RL review participants performed additional review steps. At the conclusion of this review, participants provided an adjectival performance rating for each business functional area reviewed. The ratings represent RL’s FY 1999 evaluation of PNNL’s effectiveness in meeting performance expectations and complying with applicable requirements.

RL business management specialists developed review objectives for each business functional area, which were provided to PNNL management prior to the onsite review. Planned review steps were discussed with PNNL during the entrance meeting. The review was accomplished by reviewing PNNL’s self-assessments, conducting interviews with PNNL managers and staff, reviewing documentation, and walking through processes. The emphasis was placed on performance results and improvement of business management systems.

SUMMARY OF REVIEW RESULTS

We concluded, with reasonable assurance, that overall PNNL is exceeding our expectations. Although, we identified some weaknesses during the review, those weaknesses were more than offset by strengths. We also concluded that overall PNNL’s self-assessments were sufficiently accurate and adequate.

We concluded that PNNL is substantially exceeding our performance expectations in the Budget area, which we rated as “OUTSTANDING.” We also concluded that PNNL is generally exceeding our performance expectations in the areas of Finance, Personal Property Management, Procurement, Security, and Classification/Declassification, which we rated as “EXCELLENT.”

Based upon our review, we identified strengths, weaknesses, and recommendations. Weaknesses were identified in several business areas, but none of those areas appear to warrant an additional, in-depth, “for-cause” review. Further details about the review are contained in the business functional area individual reports, which are included as Appendices to the executive summary. Each business functional area review report includes the objective of the review, review steps performed, results of the review, strengths, weaknesses, recommendations, and an adjectival performance rating. The adjectival performance ratings represent PNNL’s performance throughout FY 1999 for each business function reviewed. We utilized the self-assessments, our

“daily” operational awareness of PNNL activities, the results of this review, and other reviews conducted throughout the year to determine each rating. The following summarizes the business management strengths, weaknesses, and recommendations identified in the review.

BUSINESS MANAGEMENT STRENGTHS

1. Budget (Appendix 1):

The PNNL management of and commitment to the self-assessment process in the budget area has improved communication between the Laboratory and RL, and has led to the development of some excellent business management processes.

PNNL’s Anticipatory Authorization (AA) process is considered to be an acceptable method for mitigating possible funding violations by shifting the risk from DOE to PNNL. Their attention to the process in FY 1999 is commendable.

PNNL has established a process that gives Inter-DOE Work Order (IWO) reconciliation strict attention at month end, and has provided dedicated and knowledgeable staff resources to the function.

PNNL has adapted their financial system to show a lower level of detail that adequately addresses RL’s concerns regarding IWO reconciliation.

PNNL’s apparent compliance with DOE O 481.1 by getting formal signature authorization before beginning Work for Other Federal Agencies is considered commendable.

2. Finance (Appendix 2):

The PNNL Finance organization met the FY 1999 performance goals for invalid transactions and invalid labor transactions over 60 days old. These percentages averaged 0.42 percent and 0.07 percent, respectively, during FY 1999, which surpassed the stretch targets of 1 percent.

As required by RL, PNNL completed an audit of Interlaboratory Authorizations over \$100K in August 1999. The review showed that all of the objectives of the control had been met and overhead rates had been appropriately applied according to the agreed to proposals. In addition, PNNL has completed their policies and procedures based on RL’s requirements.

3. Personal Property Management (Appendix 3):

PNNL had an excellent personal property loss rate of 0.27 percent for property items and 0.5 percent for property acquisition value.

The change in management has been done very smoothly with minimal impact on communications and information.

Personal property procedures were reviewed and updated by PNNL.

4. Procurement (Appendix 4):

Improvement has been noted with the FY 1999 Procurement Balanced Scorecard Self-Assessment. There is a greater emphasis by Battelle in providing a detailed account of the self-assessment activities and the corresponding findings by the reviewers. In response to the FY 1998 BMOP review, PNNL included a list of corrective actions and plans for their implementation. As a result, the FY 1999 self-assessment is a more accurate reflection of the purchasing system than in the previous assessment.

In general, sole source justifications were improved over the previous year. For the most part, the sole source justifications had adequate information to allow the reviewer to comprehend the reasons for the noncompetitive action. In the review of the files it was also noticed that Contract Managers were doing reviews and providing input to the specialists to improve or strengthen the sole source justification.

The FY 1999 Balanced Scorecard metrics are an improvement over the FY 1998 metrics and will provide PNNL with more meaningful results in future years. These revised metrics reflect that PNNL is “stretching” to meet goals.

The PNNL cost/price function is independent of the PNNL Procurement function.

Our sample included several cost/price analyses performed by Judy Gitner and Mike Terrell. Each of the cost/price analyses we reviewed was excellent. The quality of the analyses demonstrates that the PNNL cost/price staff is very intelligent and very well trained. Judy Gitner and Mike Terrell should be commended for their integrity, dedication, and hard work.

5. Security (Appendix 5): Following is only some of the more significant strengths out of the many identified in the Security area. For a complete list of the strengths identified, please refer to Appendix 5.

Sensitive Compartment Information Facility (SCIF): During this reporting period, PNNL upgraded the SCIF. All phases of the upgrade were accomplished with attention to detail, ensuring that all security requirements were met. This was a cooperative PNNL Programs and Security Project that was completed under cost and on time. The Project was reviewed by the DOE Headquarters Element responsible for certification of the SCIF; there were no findings. Also, the Project was completed without any lost-time injuries.

Nuclear Material Controls and Accountability: The PNNL Material Control and Accountability (MC&A) program is mature and functioning smoothly. PNNL's MC&A internal assessment and training programs are very good. Assessment and training records are comprehensive, well maintained, and complete. Organization and management responsibilities are well defined and structured to provide an effective implementation of DOE requirements. PNNL's graded safeguards implementation approach is consistent with the category and type of material holdings at the Laboratory.

Classified Matter Protection and Control (CMPC): PNNL had 20 classified-related security infractions during the review period. As part of the resolution of this issue, PNNL Safeguards and Security Services (SASS) was innovative in instituting the two-person rule regarding handling of classified matter and providing training on this concept.

Operations Security Plans (OPSEC): The PNNL OPSEC program is a very well managed program, which meets all DOE requirements and in some instances exceeds them. The PNNL OPSEC program was the RL nominee for the 1998 National OPSEC Organizational Achievement Award and the 1999 National OPSEC Literature Award. As such, they have been selected in both cases as the DOE nominee. This is a significant accomplishment worthy of special recognition.

6. Unclassified Foreign Visits and Assignments (Appendix 6):

The PNNL automated Foreign National Activities Coordination (FNAC) system provides a reliable mechanism to acquire the necessary approvals by various required officials in different programs and departments, all utilizing electronic signatures.

7. Special Access Programs (SAP) and Intelligence Information (Appendix 7):

PNNL maintains a program that provides the proper strict controls that are necessary to protect and control information related to Special Access Programs. The SAP Program Plan, Security Manual and Classification Guidance have been approved by the proper officials. PNNL is in compliance with the security measures provided in this documentation.

8. Classification/Declassification (Appendix 8):

The PNNL National Security Analysis Team has a very senior and knowledgeable Declassification reviewer staff. They are reviewing and providing more information to the public than any other site in the complex, and have a growing reputation throughout DOE of doing high quality reviews. The team provided significant assistance in response to the discovery process in the Berg litigation.

The PNNL Classification program is also composed of knowledgeable reviewers. Knowledgeable individuals who perform classification reviews are the "gate keepers" between the protection and the release of information. In the past year, the PNNL

Classification Office was called upon by the DOE Office of Nuclear and National Security Information to assist in the writing and review of new classification guidance in the nuclear materials processing, counterintelligence, and intelligence areas. This is a demonstration of the confidence that DOE Headquarters has in the knowledge of the Classification staff.

The PNNL Classification Office developed a Portion Marking Guide that provides realistic guidance to the Derivative Classifier on how to appropriately mark all types of documents from normal correspondence to complex technical documents. This guide has been requested by several other DOE sites for use as a reference tool for portion marking.

BUSINESS MANAGEMENT WEAKNESSES/RECOMMENDATIONS

1. Budget (Appendix 1):

PNNL's practice of not waiting for formal signature authorization from the responsible RL Contracting Officer (CO) or Contracting Officer's Representative (COR) to begin work on DOE Work Authorizations is considered an area of weakness.

Recommendation: In our opinion, PNNL must not begin work on DOE Work Authorizations before obtaining formal signature authorization from the responsible CO or COR. If PNNL decides to proceed with work before receiving that authorization, they must do so at their own risk. One possible solution would be to add a category to the Anticipatory Authorization (AA) process requiring an AA when PNNL needs to begin work before the RL CO or COR signature authorization is obtained.

2. Finance (Appendix 2):

Our review of the PNNL invoice reports disclosed there is no Interlaboratory Authorization (ILA) expiration date and, as a result, the project manager would not be able to detect any cost incurred outside the formal ILA agreement period of performance by reviewing the invoice alone. There are other resources that provide this information, but not on the invoice.

Recommendation: PNNL should visit and pursue the feasibility of requiring ILA expiration dates on invoices.

There is no formal process for closing out ILAs. The process for developing one has been initiated, but it is not complete.

Recommendation: PNNL should complete the development and implementation of a close out process to ensure ILAs are closed properly and on a timely basis.

3. Procurement (Appendix 4):

Several of the Eastern European Subcontract files reviewed had deficiencies. Price analyses by the contract specialists were not adequate for evaluating price when decisions were made to ignore the results of cost/price analyses performed by cost/price analysts. The determinations of price reasonableness lacked sufficient detail as to lead the reviewer to believe the prices obtained were reasonable and could withstand the scrutiny of an audit. Within a large portion of these files, the cost/price analysis performed was secondary to the placement of the contract and, in some cases, was waived entirely for commodities and services for which there is little or no history.

Recommendation: PNNL management needs to demonstrate its support of the cost/price function. There needs to be a change in the cultural climate away from the attitude that cost/price analysis is a “needless, additional, and time consuming” process.

The recommendations stated in the cost/price analysts’ reports are often either disregarded or overridden.

Recommendation: PNNL management needs to support the findings of the cost/price analysts and develop internal controls to prevent the disregarding and overriding of cost/price analysis recommendations.

Technical evaluations of cost/price proposals were sometimes superficial and frequently did not address the quantitative and qualitative aspects of proposals.

Recommendation: Technical evaluations are critical to the performance of quality cost/price analysis. PNNL should develop a long-term program to continuously improve the quality of technical evaluations of cost proposals. Both buyers and technical staff should be aware of their responsibilities.

In contract actions between \$100K and \$500K, the contract specialist generally did not conduct negotiations, but instead settled for awarding the prices proposed. When negotiations were held, there is no evidence that cost/price analysts attended or were consulted.

Recommendation: PNNL management should modify its procedures to:
(1) require meaningful negotiations of contracts in the \$100K to \$500K range, and (2) require the participation of cost/price analysts in negotiation of contracts in that range.

There appears to be no procedure in place and functioning which requires contract specialists to reject inadequate proposals. Contract specialists negotiate awards based on inadequate proposals.

Recommendation: PNNL should modify its procedures to direct buyers to reject inadequate proposals.

During the FY 1998 BMOP review, the need for better sole source justifications was identified as an area which needed improvement; specifically that vendor or product familiarity, of itself, is not sufficient basis for the sole source justification. This justification continues to be utilized by contract specialists, especially within contract actions having a dollar value between \$10,000 and \$100,000.

Recommendation: PNNL management should require valid, rational sole source justifications.

Not all purchase orders or contracts contain a Memorandum of Procurement.

Recommendation: PNNL should ensure that all purchase orders and contracts contain a Memorandum of Procurement.

The Integrated Procurement and Accounts Payable (IPAP) system produced data results that were not accurate (e.g. incorrect, wrong dates). For this system to be utilized as a tool for management, it is important that it contain accurate data.

Recommendation: PNNL should ensure that the IPAP system contains accurate data.

4. Security (Appendix 5): The BMOP review of Security is conducted in conjunction with the Periodic Safeguards and Security Survey of PNNL. As a result, there may be additional items included in the Periodic Safeguards and Security Survey Report that are not identified in this Business Management Oversight Review Report. Below are the Security weaknesses and recommendations currently identified.

Physical Security: Not all Limited Area Island walls extend from the floor to the structural ceiling as required by DOE Order 5632.1C.

Recommendation: For continued use of these locations for the storage and use of classified matter, PNNL must either extend the walls to the structural ceiling or establish equivalent means to meet the requirement allowed by the Order.

Incident Reporting and Management: PNNL does not follow the guidelines set in their own Safeguards and Security Services (SASS) procedures for handling the timeliness of security infraction reports. Subsequently, DOE F 5639.3, Part II (used as the final report on an infraction), is not received by RL in a timely manner. In addition, there are no specific timelines set for PNNL line management to complete their management critique of infractions, which further delays the receipt of infraction information by RL.

Recommendation: Guidelines should be set for PNNL line management in order to assure RL more timely receipt of infraction information. In addition, PNNL SASS should follow their guidelines.

Nuclear Material Control and Accountability: PNNL's measurement and measurement control program contains gaps in its implementation. Documentation, to demonstrate measurement personnel and equipment qualification/validation, is weak and needs to be formally documented and established.

Recommendation: All applicable elements of the measurement and measurement control requirements in DOE Order 5633.3b (now DOE O 474.1 and DOE M 474.1-1) should be reviewed against existing procedures and systems, re-evaluated for completeness, and improvements implemented as necessary.

Pre-employment Waivers: Approximately 59.7 percent of the employees hired by PNNL who required a security clearance were hired before their security clearances were granted and no pre-employment waiver was approved. Only 0.4 percent of those who were hired prior to a security clearance being granted were processed in accordance with the DOE Order that requires an approved pre-employment waiver.

Recommendation: The Pre-employment waiver is the responsibility of PNNL Human Resources (HR) to provide to DOE. The request for a security clearance is processed by PNNL Security. Better communication between these organizations is needed to ensure clearances are granted prior to an employee entering on duty.

Pre-employment Investigations: Derogatory information discovered by PNNL HR in the pre-employment investigation is not reported to PNNL SASS or RL. PNNL HR indicated that their legal department had advised that derogatory credit information that resulted from the pre-employment investigation could not be provided to PNNL SASS or RL. RL's Office of Chief Counsel reviewed the Fair Credit Reporting Act and indicated there was no prohibition against providing the information to PNNL or RL.

Recommendation: PNNL HR should forward all derogatory information revealed as a part of the pre-employment investigation to PNNL SASS so the information can be forwarded on to RL.

Security Clearances: When an employee requires both a DOE and U.S. Department of Defense (DoD) security clearance, PNNL is granting the DoD clearance prior to the DOE clearance.

Recommendation: PNNL should ensure up front that both DOE and DoD security clearances are required and process the DOE clearance first. They should not initiate the processing of a DoD clearance until the DOE clearance has been granted.

5. Unclassified Foreign Visits and Assignments (Appendix 6):

The PNNL Foreign National Activities Coordination (FNAC) staff sends pre-briefing and post-briefing materials to each host over the PNNL network for the PNNL counterintelligence organization. Responses are requested in 7 days. A few hosts, however, do not complete this material in a timely manner, and it could be weeks before a response is received. Reminders are periodically sent to the hosts until a response is received. Since the FNAC staff is in the Security organization and briefings are considered a counterintelligence (CI) responsibility, enforcement of the timely completion is not done. The follow-up on these requests will be performed by the CI organization when staff vacancies are filled.

Recommendation: The PNNL CI organization should take a more active role in retrieving delinquent briefing packages until this function has completely transitioned into their organization.

Hosts may not be informing the FNAC staff in a timely manner when a particular foreign national could be more appropriately hosted by another staff member. This action would help assure adequate oversight and formally document what is actually being done.

Recommendation: PNNL hosts should provide timely notification to FNAC staff of any changes that should be made in their hosting responsibilities.

6. Special Access Programs (SAP) and Intelligence Information (Appendix 7):

The notification process for staff members possessing a Sensitive Compartmented Information (SCI) clearance and traveling to a foreign country could be improved and formalized to assure stricter compliance with the Director of Central Intelligence Directive (DCID) 1/20 requirements. DCID 1/20 requires that itineraries are submitted in advance of travel and a defensive security briefing provided to travelers. Relying on the staff member when there are potential automated means of notification would strengthen this area.

Recommendation: Notification of official foreign travel should be automatically sent to the PNNL Special Security Officer (SSO) at the same time as travel is sent for approval in the Foreign Travel Management System. This notification would ensure that travelers have the necessary awareness regarding potential threats.

7. Classification/Declassification (Appendix 8):

The PNNL Classification Office provides quality assurance oversight of declassified documents for the National Security Analysis Team (NSAT). During this past fiscal year, the Classification Office staff member who routinely performed these reviews took another assignment. Two other individuals within the NSAT were granted quality

assurance oversight authority for the Classification Office. Although these selected individuals are knowledgeable, the independence of the oversight is no longer apparent.

Recommendation: The PNNL Classification Office should verify the quality of a portion of the documents reviewed by the NSAT staff who have been granted quality assurance authority by the PNNL Classification Office.

**U.S. DEPARTMENT OF ENERGY (DOE)
 RICHLAND OPERATIONS OFFICE (RL)
 BUSINESS MANAGEMENT OVERSIGHT REVIEW
 OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

**FUNCTIONAL AREAS OF REVIEW AND
 RL REVIEW TEAM MEMBERS**

REPORT OUTLINE

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**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

BUDGET

I. Functional Area of Review

Budget

II. Objective of Review

Validate PNNL's self-assessment in the budget areas to determine if agreed-upon Fiscal Year (FY) 1999 performance objectives were successfully met. Also, review fiscal management functions, per the April 24, 1998 memorandum from Michael L. Telson, Chief Financial Officer, subject Fiscal Management.

III. Review Steps Performed

- A. BD1: To ensure DOE obligated funds are authorized as quickly as possible to PNNL project managers. Communicate funding issues that PNNL cannot mitigate without RL action.

Met with PNNL staff responsible for this measure and requested documentation supporting their performance results. They provided a listing of all reserve accounts and their balances at fiscal year-end.

- B. BD2: Minimize Financial Plan overruns.

Reviewed overrun reports monthly throughout FY 1999 that PNNL made available to PNNL and RL staff on the Internet. Reviewed selected overrun reports for consistency of data. Compared final overrun report to DISCAS overruns and PNNL final contract summary. Also reviewed reasons for overruns at fiscal year-end.

- C. BD3: Comply with the DOE Uncosted Policy by meeting the uncosted balance threshold levels by control point, or provide an acceptable justification when thresholds are exceeded. Minimize uncosted balances based on the annual uncosted balance review.

Ascertained, from PNNL staff responsible for this measure, the methodology for determining that funds were not required or the project was completed.

- D. BD4: To ensure PNNL's and RL's Inter-DOE Work Order (IWO) balances are consistent.

Reviewed PNNL's procedures for verifying balances with DOE and other field office contractors. Evaluated PNNL's modifications to their financial systems to account for the relationship between Budget and Reporting Code (BNR), Fund Type, and IWO number. Assessed PNNL's steps to clean-up old balances that were inconsistent with RL and other field office balances. Finally, reviewed PNNL's plan of action to get the remaining inconsistencies corrected.

- E. PS8: Provide timely planning and budgeting by minimizing overruns, and ensuring the risk associated with work not covered by an authorization is accepted by management.

Obtained documentation or information clarifying the basis for their results from the PNNL staff responsible for this measure. Obtained copies of all anticipatory authorizations in place at fiscal year-end and copies of all business office monthly anticipatory authorization files.

- F. BM4: Provide timely planning and budgeting by completing accurate and timely budget formulation and Unicall submittals.

Reviewed PNNL's self-assessment and compared it to Budget Division records.

- G. BM5: Provide timely planning and budgeting by submitting DOE funding estimates on time with little or no rework.

Reviewed PNNL's self-assessment and compared it to Budget Division records.

- H. Fiscal Management:

Reviewed DOE-prescribed guidance for funds distribution and control, Work Authorizations, and Work for Others (WFO) to determine the applicable criteria. Evaluated PNNL's internal policies and procedures for managing funds receipts, Work Authorizations, and WFO orders to obtain an understanding of their methodologies and to evaluate the effectiveness of those policies and procedures for ensuring, if followed, compliance with DOE requirements. Interviewed RL and PNNL individuals to determine if there was a shared understanding of the respective responsibilities for ensuring that the DOE Work Authorizations and the WFO orders were properly authorized before PNNL began work. Finally, selected a small sample of transactions for DOE Work Authorizations and WFO to determine if: (1) the DOE Work Authorizations were properly authorized before PNNL began work and the work was performed within the funds obligated, and (2) WFO did not begin prior to receipt of a valid order or advance funding and was performed within the amount and time-frame authorized.

IV. Results of Review

Based upon our review of the Budget functions, we believe that PNNL has successfully met or exceeded their FY 1999 Budget related performance objectives. The detailed results of our review are below:

A. BD1

PNNL's goal is to clear all funds received from RL in the financial plan to specific projects by fiscal year-end, after determining that work authorizations are in place. A report was provided showing that all PNNL program manager accounts had zero balances, with the exception of six that were placed in reserve at fiscal year-end at the request of RL.

B. BD2

PNNL has made overrun reports for projects funded by work authorizations available to all PNNL and RL employees, by project and both product line and division, within two days of each fiscal month processing. This action has allowed all levels of management to quickly identify potential problems and begin working together to solve them, resulting in more effective project management and funds control. Comparisons of this report to DISCAS indicate that these reports are correct. Automating them and maintaining a fiscal year history on the Internet have made the reports more accessible and effective.

C. BD3

All financial plan projects, excluding those funded by Environmental Management which go through a separate process, were reviewed by PNNL's Budget Execution group to reduce uncoded balances. By June, all projects with FY 1998 uncoded balances and no FY 1999 activity were identified and funds withdrawn from those projects, unless project managers justified a need for the funds. The funds were then certified as available for withdrawal. These actions resulted in an uncoded reduction of \$368,105 from uncoded, unencumbered balances, covering 25 different BNRs.

D. BD4

PNNL successfully met the IWO reconciliation measure. They corrected all but four of the outstanding IWOs. All IWOs were reconciled, but correction of the remaining outstanding IWOs is outside of their control. They have worked with their IWO counterpart offices to correct balances, but are dependent on them to act. This hindered PNNL from exceeding their expected goal.

E. PS8

At the end of FY 1999, of their approximately 800 financial plan contracts, PNNL had only 12 overruns totaling about \$67K. Of these overruns, none overran the work authorization or BNR, and only five had overruns in the previous month. All of the overruns that required an anticipatory authorization had one in place at year-end. This excellent performance can be credited to greater project overrun visibility and a Business Office commitment to reduce PNNL's liability, while meeting customer and project manager needs.

This is the second year this measure has been under the Business Office. Both the objective and measurement methodology was changed dramatically at the beginning of FY 1999. There was remarkable cooperation between PNNL and RL to improve this measure, highlighting PNNL's commitment to the self-assessment process and to developing good business management practices.

F. BM4

The Budget Division agrees with PNNL's self-assessment.

G. BM5

The Budget Division agrees with PNNL's self-assessment.

H. Fiscal Management

For Work for Other Federal Agencies, PNNL's management controls and procedures for receiving and managing funds and funding guidance appear sufficient to provide reasonable assurance that the work was performed within the amount and timeframe authorized. In particular, we noted that PNNL appears to comply with DOE O 481.1 titled "Work for Others (Non-Department of Energy Funded Work)", which requires waiting to begin Work for Other Federal Agencies until the responsible RL Contracting Officer (CO) or authorized Contracting Officer Representative (COR) provides formal signature authorization to proceed.

For DOE Work Authorizations, with one exception, we believe that PNNL's management controls and procedures for receiving and managing funds and funding guidance appear sufficient to provide reasonable assurance that the work was performed within the funds obligated. The one exception is in the area of getting formal signature authorization to proceed with the work before actually beginning the work. This issue is discussed further below.

For DOE Work Authorizations, PNNL is willing to begin work in some instances before receiving the formal signature authorizations to proceed or before receiving sufficient funds. In addition, for Work for Other Federal Agencies, PNNL is willing

to continue work in some instances before receiving sufficient funds to continue. However, in both cases, PNNL mitigates the potential funding violation by means of its Anticipatory Authorization (AA) process. The AA process is a formal process for getting PNNL management approval and acceptance of the financial risk of performing work for a client not currently covered by a formal authorization. When the need exists for beginning work before it is formally authorized, PNNL project managers are required to get an AA approved by management before performing or authorizing the work.

During the review, we noted that for DOE Work Authorizations, PNNL does not typically wait to begin work for the responsible RL CO or COR to provide formal signature authorizations to proceed. Instead, PNNL has been accepting the DOE Headquarters Program Secretarial Officer's signature and funding via a contract modification from RL as the authority to begin work. Since the PNNL contract is with RL, it is the belief of the current RL CO and RL Office of the Assistant Manager for Science and Technology (AMT) that the responsible RL CO or COR are the only individuals who can direct PNNL to proceed. This belief has not at this time been formally communicated to PNNL, though both the RL CO and AMT intend to do so.

V. Strengths

- The PNNL management of and commitment to the self-assessment process has improved communication between the Laboratory and RL, and has led to the development of some excellent business management processes.
- PNNL's AA process is considered to be an acceptable method for mitigating possible funding violations by shifting the risk from DOE to PNNL. Their attention to the process in FY 1999 is commendable.
- PNNL has established a process that gives IWO reconciliation strict attention at month end, and has provided dedicated and knowledgeable staff resources to the function.
- PNNL has adapted their financial system to show a lower level of detail that adequately addresses RL's concerns regarding IWO reconciliation.
- PNNL's apparent compliance with DOE O 481.1 by getting formal signature authorization before beginning Work for Other Federal Agencies is considered commendable.

VI. Weakness

PNNL's practice of not waiting for formal signature authorization from the responsible RL CO or COR to begin work on DOE Work Authorizations is considered an area of weakness.

VII. Recommendation

In our opinion, PNNL must not begin work on DOE Work Authorizations before obtaining formal signature authorization from the responsible CO or COR. If PNNL decides to proceed with work before receiving that authorization, they must do so at their own risk. One possible solution would be to add a category to the AA process requiring an AA when PNNL needs to begin work before the RL CO or COR signature authorization is obtained.

VIII. Performance Rating

“Outstanding” – PNNL has met or exceeded expectations in all areas reviewed. Through both knowledgeable and dedicated staff and improved processes, they have successfully diminished overruns, have significantly improved the tracking and institutionalization of the AA process, and have put greater emphasis on the IWO reconciliation. Even regarding the weakness, PNNL has not been formally notified of the RL CO's and AMT's intent and it is our belief that they will be able to successfully implement a solution.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

FINANCE

I. Functional Area of Review

Finance

II. Objective of Review

There are two main objectives of the RL-Finance Division (RL-FIN) review:

1. Review PNNL's 1830 Interlaboratory Authorization (ILA) process to assure compliance with policies and procedures approved by RL.
2. Review two self-assessment measures, included in the PNNL Finance Directorate plan, to validate PNNL's self-assessment results for percent of invalid transactions and percent of labor invalid transactions to determine if our agreed-upon Fiscal Year (FY) 1999 performance objectives were successfully met.

III. Review Steps Performed

1. Reviewed PNNL's FY 1999 audit of ILAs exceeding the \$100K threshold.
2. Reviewed PNNL's policies and procedures on ILAs to determine whether they are consistent with RL directions.
3. Discussed the entire ILA process, including forms, procedures, and other relevant documentation requirements with PNNL to determine if these areas could be improved.
4. Reviewed quarterly self-assessment reports for these self-assessment areas: (PS5)- Percent of invalid transactions greater than 60 days old, and (PS6)- Percent of labor invalid transactions greater than 60 days old.
5. Reviewed fourth quarter self-assessment source data supporting the two invalid transaction areas and determined that FY 1999 percent of invalid transactions greater than 60 days old was 0.42 percent, and percent of labor invalid transactions greater than 60 days old was 0.07 percent.

IV. Results of Review

Based on our review, it appears that PNNL's 1830 ILA process is consistent with policies and procedures approved by RL. Our review also leads us to believe that PNNL has successfully met their FY 1999 performance objectives for invalid transactions greater than 60 days old and labor invalid transactions greater than 60 days old. The detailed results of our review are below:

1. As required by RL, PNNL completed an audit of FY 1999 ILAs in August 1999. PNNL only had seven ILAs over \$100K. Due to the small number, all seven were reviewed. The purpose of the audit was to ensure that these 1830 ILAs were being completed on schedule and within budget, overheads were applied correctly, and that other Battelle components received no competitive advantage. The results of the review showed that all of the objectives had been met.
2. PNNL has completed their policies and procedures based on RL's requirements. The current PNNL procedures require that 1830 programmatic ILA work authorizations with a cumulative value greater than \$100K will be subject to preparation of a formal cost proposal, technical evaluation, cost-price analysis, and formal acceptance. Costs in excess of the maximum obligation will not be charged to Contract 1830 until review and approval by the PNNL project manager and an increase in the maximum obligation of the ILA. If PNNL does not approve such costs, the Battelle performing component will issue a credit to PNNL.
3. Our review of the ILA process, forms, procedures, and other relevant documentation found a couple of areas that need to be improved:
 - (a) Each financial processing, the costs associated with an ILA is transferred from the Battelle performing component to the Laboratory. An invoice report is system generated and is sent to the project manager for review and approval. Our review of the invoice reports disclosed there is no ILA expiration date, and as a result, the project manager would not be able to detect any cost incurred outside the formal ILA agreement period of performance by only reviewing the invoices. PNNL does have other tools available for checking cost incurred against the expiration date, but the date is not on the invoice itself.
 - (b) We also discovered there is no formal process for closing out ILAs. Prior to this review, PNNL initiated the development and documentation of a close out process, but it is not complete.
4. PNNL's self-assessments of percent of invalid transactions greater than 60 days old, and percent of labor invalid transactions greater than 60 days old show that they both "Meet Expectations." PNNL's reports provide sufficient detail and historical information supporting PNNL's assessment results.

5. Our review of the self-assessment source data shows that proper reconciliation and oversight is occurring in these self-assessment areas, and documentation exists to substantiate the results.

V. Strengths

PNNL met the FY 1999 performance goals for invalid transactions and invalid labor transactions over 60 days old. These percentages averaged 0.42 percent and 0.07 percent, respectively, during FY 1999, which surpassed the stretch targets of 1 percent.

As required by RL, PNNL completed an audit of ILAs over \$100K in August 1999. The review showed that all of the objectives of the control had been met and overhead rates had been appropriately applied according to the agreed to proposals. In addition, PNNL has completed their policies and procedures based on RL's requirements.

VI. Weaknesses

Our review of the invoice reports disclosed there is no ILA expiration date and, as a result, the project manager would not be able to detect any cost incurred outside the formal ILA agreement period of performance by reviewing the invoice alone. There are other resources that provide this information, but not on the invoice.

There is no formal process for closing out ILAs. The process for developing one has been initiated, but it is not complete.

VII. Recommendations

PNNL should visit and pursue the feasibility of requiring ILA expiration dates on invoices.

PNNL should complete the development and implementation of a close out process to ensure ILAs are closed properly and on a timely basis.

VIII. Performance Rating

“Excellent” -- PNNL has met or exceeded expectations in all of the thirteen Finance function areas for FY 1999. Although there are some control weaknesses and deficiencies noted by RL and PNNL Internal Audit, in general PNNL has been conducting financial management activities responsibly and effectively. We also note that PNNL has been proactive in working with RL to improve their self-assessment process and performance measures.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

PERSONAL PROPERTY MANAGEMENT

I. Functional Area of Review

Personal Property Management

II. Objective of Review

Validate PNNL Personal Property's self-assessment results to determine if the agreed-upon Fiscal Year (FY) 1999 performance objectives were successfully met.

Verify that the property system is operational and can be re-certified.

III. Review Steps Performed

1. Reviewed inventory results completed during FY 1999 to determine if they met the standards.
2. Reviewed PNNL's performance measures results for Property Management.
3. Interviewed PNNL personal property management to discuss corrective actions or improvements that were implemented.
4. Reviewed the year's performance in submissions to RL on property management issues.

IV. Results of Review

Based upon our review of the Personal Property function, it is believed that PNNL has successfully met their FY 1999 performance objectives.

1. PNNL's Balanced Scorecard results, in general, met the performance measures and expectations that were established in the plan.
2. The property management submittals were submitted on time and fully completed.
3. The property management system is operational with no significant changes required. Re-certification of the property system can be approved.

V. Strengths

1. PNNL had an excellent personal property loss rate of 0.27 percent for property items and 0.5 percent for property acquisition value.
2. The change in management has been done very smoothly with minimal impact on communications and information.
3. Procedures were reviewed and updated.

VI. Weaknesses

No significant weaknesses were identified.

VII. Recommendations

Not Applicable.

VIII. Performance Rating

“Excellent” – PNNL has met or exceeded most of the performance expectations that were established in the Balanced Scorecard Plan and overall, has exceeded our expectations of maintaining an effective Property Management System and Program.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)
PROCUREMENT**

I. Functional Area of Review

Procurement

II. Objective of Review

The primary objective is to review and validate the Balanced Scorecard (BSC) Self-Assessment. The main focus of this review will include verification of: survey results, incorporation of comments from FY 1998 BMOP Review, corrective actions taken in response to the FY 1998 BMOP Review, evidence of effective internal controls, adequate sole source justifications and technical evaluations, and effective cost/price analysis.

III. Review Steps Performed

- Reviewed survey results, including comments, for survey performed during FY 1999.
- Review of cost/price analysis from under \$100,000 to over \$500,000.
- Review of sole source justifications for actions ranging from under \$100,000 to over \$500,000 in response to FY 1998 BMOP findings.
- Review of OC3 Link Request for Proposal (RFP).
- Review of contracts with Eastern European vendors.
- Review of corrective action plans and implementation of plans.

IV. Results of Review

A. Customer Perspective

Reviews of the survey results from the customer survey were validated and comments noted. Of the customers surveyed, 93.8 percent indicated that they were satisfied or more than satisfied with the communications provided by the contracts staff. An increase was noted in the extremely satisfied category. There appears to be only minor issues in regards to follow-on with customers on the status of their acquisitions. There also was an increase within the area of the staff's ability to create innovative solutions. All of the comments received were positive. Response time to customers and the time to complete an acquisition action was also excellent as validated by the survey results. There are some

minor concerns relating to the time to complete the action, however, the general comments overall were positive. The overall satisfaction of the customers who completed the survey questionnaire was at 89.9 percent. This was a slight drop in the ratings from the previous Balanced Scorecard results. The comments received were very favorable for the most part. The comments, which were negative in nature, ranged from high costs, delays, inflexibility, and management problems. The overall rating of 89.9 percent is an indication that PNNL is meeting the customers needs and is providing excellent service to its customers and thereby is meeting the metric in this area.

B. Internal Business Perspective

The PNNL self-assessment covered nine areas consisting of 47 activities and were reviewed using a checklist and information from the Integrated Procurement and Accounts Payable (IPAP) system to identify candidate files. In response to the FY 1998 BMOP review, PNNL provided a more thorough review of the nine areas. This included observations and summary information detailing any issues or problems found during the review and corrective actions that will be needed. There has been improvement made in the reporting of problems/issues and the inclusion of the problems/issues within the self-assessment.

1.0 Purchasing System

No Comment

2.0 Staff Training and Development

While there is adequate training of staff it was obvious to the reviewers further training needed to be emphasized within particular areas of procurement. More thorough training is needed to ensure specialists are thinking of all options before proceeding with sole source procurement and at a minimum conducting limited market research. Further, Contract Specialists need to have more extensive training in the area of cost/price analysis and the determination of price reasonableness if the practice of waiving cost/price is continued.

3.0 Pre-Procurement Planning

There continues to be some issues with pre-procurement planning. As part of our review we once again noticed a lack of pre-planning for acquisitions and deficiencies contained within sole source justifications. The sole source justifications were markedly improved over the FY 1998 BMOP review, but there is further room for improvement as evidenced by the finding under 3.4 of the PNNL self-assessment. There is also room for improvement in some of the sole source justifications.

4.0 Solicitation Procedures

PNNL does have adequate procedures in place to effectively and efficiently place contracts. As evidenced within the OC3 Link file, which was reviewed, PNNL followed procedures and internal policies in the placement of this contract. They were consistent in their approach and did produce a competitive acquisition. However, there are some issues of concern over the difference in prices proposed by the two vendors. With that large of a discrepancy in price, there should have been further review to justify the difference in price before selecting GTE for award. This was evidenced by the file and the corresponding statement, “the difference in price, which is ‘partially’ explained due to tariffs and being the selected provider of the service.” If protest were to have happened there could have been some issues raised concerning this statement.

5.0 Cost/Price Analysis

Our review concludes that the cost/price analysis function has met the performance objectives. In general, PNNL procedures are adequate, and procurement files are well documented. PNNL met all the performance measurement criteria defined in the FY 1999 Performance Agreement.

The results of our review, however, demonstrate that the recommendations of cost/price analysts can be overridden or disregarded when those findings conflict with the desires of procurement management. PNNL’s self-assessment stresses the importance of the minimization of time in the procurement process. Gathering sufficient cost/price data, however, can be a time consuming procedure, and as a result, there appears to be a built in procedural conflict that negatively influences the perception of the importance of the cost/price function. There appears to be an environment at PNNL in which the cost/price function may be viewed as a hindrance, rather than a value-added tool, to the award of contracts at fair and reasonable prices.

6.0 Effective Utilization of Alternative Procurement Methods

PNNL has continued to make good utilization of P-Cards for small acquisitions. In addition, PNNL has done a good job of integrating the Affirmative Procurement Program with the use of P-Cards.

7.0 Technical Evaluations

The 1999 BSC Self-Evaluation addressed the adequacy of Technical Evaluations and is an improvement over the previous review. Upon review of a sample of contracts with Eastern European contractors,

however, we were troubled by the fact that the technical evaluators seldom, if ever, took exception to the technical proposals. We find this troubling and would expect to find more instances where a thorough technical evaluation questioned some aspect of the proposal or turned up opportunities to improve the technical aspects or pricing of the proposal.

8.0 Negotiation and Award

The BSC Self-Evaluation identified a lack of negotiations taking place (for contracts between \$10,000 and \$99,999) and we agree. In reviewing Eastern European contracts we found little evidence of negotiations having taken place. In several instances, the only negotiation that appears to have taken place is a comment to the effect that the buyer asked the seller if he could reduce his price, but the seller refused because it was his lowest price. More effort should be placed in negotiating a better price, product, or delivery schedule. If this is being done, better documentation should be made of the fact. The corrective actions for this item have already been initiated and we will follow up on further corrective actions after PNNL has had a chance to implement them.

9.0 Independent Reviews

Not Reviewed

C. Financial Perspective

No Review Performed

D. Learning and Growth Perspective

PNNL is meeting the criteria as set forth in this objective.

V. Strengths

- Improvement has been noted with the FY 1999 BSC Self-Assessment. There is a greater emphasis by Battelle in providing a detailed account of the self-assessment activities and the corresponding findings by the reviewers. In response to the FY 1998 BMOP review, PNNL included a list of corrective actions and plans for their implementation. As a result, the FY 1999 Self-Assessment is a more accurate reflection of the purchasing system than the previous assessment.
- In general, sole source justifications were improved over the previous year. For the most part, the sole source justifications had adequate information to allow the reviewer to comprehend the reasons for the noncompetitive action. In the review of

the files it was also noticed that Contract Managers were doing reviews and providing input to the specialists to improve or strengthen the sole source justification.

- The revised metrics provided within the Balance Scorecard are a reflection that PNNL is “stretching” to meet goals, instead of the metrics utilized within the FY 1998 BMOP. The metrics utilized were an improvement and will provide PNNL with more meaningful results for future years.
- The PNNL cost/price function is independent of the PNNL Procurement function.
- Our sample included several cost/price analyses performed by Judy Gitner and Mike Terrell. Each of the cost/price analyses we reviewed was excellent. The quality of the analyses demonstrates that the PNNL cost/price staff is very intelligent and very well trained. Judy Gitner and Mike Terrell should be commended for their integrity, dedication, and hard work.

VI. Weaknesses/Recommendations

Several of the Eastern European Subcontract files reviewed had deficiencies. Price analyses by the contract specialists were not adequate for evaluating price when decisions were made to ignore the results of cost/price analyses performed by cost/price analysts. The determinations of price reasonableness lacked sufficient detail as to lead the reviewer to believe the prices obtained were reasonable and could withstand the scrutiny of an audit. Within a large portion of these files, the cost/price analysis performed was secondary to the placement of the contract and, in some cases, was waived entirely for commodities and services for which there is little or no history.

Recommendation: PNNL management needs to demonstrate its support of the cost/price function. There needs to be a change in the cultural climate away from the attitude that cost/price analysis is a “needless, additional, and time consuming” process.

The recommendations stated in the cost/price analysts’ reports are often either disregarded or overridden.

Recommendation: PNNL management needs to support the findings of the cost/price analysts and develop internal controls to prevent the disregarding and overriding of cost/price analysis recommendations.

Technical evaluations of cost/price proposals were sometimes superficial and frequently did not address the quantitative and qualitative aspects of proposals.

Recommendation: Technical evaluations are critical to the performance of quality cost/price analysis. PNNL should develop a long-term program to continuously

improve the quality of technical evaluations of cost proposals. Both buyers and technical staff should be aware of their responsibilities.

In contract actions between \$100K and \$500K, the contract specialist generally did not conduct negotiations, but instead settled for awarding the prices proposed. When negotiations were held, there is no evidence that cost/price analysts attended or were consulted.

Recommendation: PNNL management should modify its procedures to: (1) require meaningful negotiations of contracts in the \$100K to \$500K range, and (2) require the participation of cost/price analysts in negotiation of contracts in that range.

There appears to be no procedure in place and functioning which requires contract specialists to reject inadequate proposals. Contract specialists negotiate awards based on inadequate proposals.

Recommendation: PNNL should modify its procedures to direct buyers to reject inadequate proposals.

During the FY 1998 BMOP review, the need for better sole source justifications was identified as an area which needed improvement; specifically that vendor or product familiarity, of itself, is not sufficient basis for the sole source justification. This justification continues to be utilized by contract specialists, especially within contract actions having a dollar value between \$10,000 and \$100,000.

Recommendation: PNNL management should require valid, rational sole source justifications.

Not all purchase orders or contracts contain a Memorandum of Procurement.

Recommendation: PNNL should ensure that all purchase orders and contracts contain a Memorandum of Procurement.

The IPAP system produced data results that were not accurate (e.g. incorrect, wrong dates). For this system to be utilized as a tool for management it is important that it contain accurate data.

Recommendation: PNNL should ensure that the IPAP system contains accurate data.

VII. Other Observations

The results of our review, however, demonstrate that the recommendations of cost/price analysts can be overridden or disregarded when those findings conflict with the desires of

procurement management. PNNL's self-assessment stresses the importance of the minimization of time in the procurement process. Gathering sufficient cost/price data, however, can be a time consuming procedure, and as a result, there appears to be a built in procedural conflict that negatively influences the perception of the importance of the cost/price function. There appears to be an environment at PNNL in which the cost/price function may be viewed as a hindrance, rather than a value-added tool, to the award of contracts at fair and reasonable prices.

The results of our review of four specific files, which disclosed some concerns, are discussed in the following paragraphs:

A. Russian/Soviet State Contracts

We reviewed seven files related to Russian/Soviet State procurement actions. Of the seven files reviewed, only three contracts exceeded the \$100K threshold for which cost/price analysis is required, and in one of the three cases, the requirement was waived. We found that cost/price analysis was inadequate in one of the two remaining files requiring performance of the analysis.

(Contract No. 332826; FFP; contract value \$2,496,541) The Russian contractor provided quotes and price lists for equipment and material, but no data was disclosed to support the proposed labor. Direct labor amounts to 69 percent of the prime contract and 91 percent of the subcontracts. In the Memorandum of Procurement, the contract specialist stated in the report "as with all other (Russian) contractors, payroll information is basically non-existent. Therefore, no other information has been provided. Considering the lack of information that has been supplied for labor, we should obtain a waiver." PNNL management authorized a waiver from the TINA requirement that cost or pricing data must be submitted in support of proposals as large as this Russian proposal.

The same reasoning was used to waive the pre-award audit requirement. "It is very difficult to obtain any financial data from foreign contractors, and when it is obtained, in almost all cases, the data does not constitute certified cost or pricing data. In addition, it is highly unlikely that the contractor would allow PNNL or any other U.S. representative to audit or inspect their books. Based on the above, (we) have requested a waiver from the requirement of a pre-award audit." PNNL management granted the waiver.

The technical evaluation accepted the proposed mix and quantities of labor because "the workscope was consistent with that developed by Russian/US team members during the feasibility study." Nevertheless, when the specific quantities of labor were analyzed, PNNL discovered that more man months had been proposed than were required to perform the work. In its response to inquiries about the quantity of labor proposed, the Russian contractor stated,

“We would like to know what numbers are acceptable for you in order to analyze them, and if possible, find a certain compromise for this issue. So we ask you to provide us with those numbers.”

The Russian contractor had PNNL determine how much labor to propose.

From the outset, it appears that PNNL prepared the technical and quantitative aspects of the proposal for the Russian contractor, but the contractor would provide no data supporting the costs proposed.

Price analysis was based on a survey of Russian salaries conducted in November and December of 1996. Even if the data in the survey did reflect the contractors' labor types and groupings, the data was not current and should not have been accepted as support for the proposal. The cost/price analyst qualified his report stating that labor cost data is nearly non-existent, and the little data that does exist is not reliable. However, that qualification was disregarded. The PNNL management position appears to have been that since we cannot get any reliable data, the only way to award the contract is to waive the legal requirement for both submission of data and for audit. Cost/price analysis cannot be performed using non-existent data. In these circumstances, there can be no way of determining whether a price is fair and reasonable.

We recommend using the Defense Contract Audit Agency (DCAA) European Branch to perform pre-award audits of Russian/former Soviet State proposals. In this particular instance, technical discussions had been conducted over a period of two years before the award. There was ample opportunity to have a DCAA pre-award audit performed.

B. Non-Russian/Soviet State Contracts

We reviewed twenty-three files related to non-Russian procurements. All twenty-three contracts included in the sample exceeded the \$100K threshold for which cost/price analysis is required. We found weaknesses in the use of the cost/price function in four of the files reviewed.

1. (Contract No. 332701; FFP; contract value \$280,056) A contract with a Croatian contractor was awarded under conditions very similar to those surrounding the award of the contract to the Russian firm discussed above. The cost/price analyst's report states:

“Since the amount does not exceed \$500K, certified cost or pricing data is not required, and none has been received. In the past, (this contractor) has stated, ‘we will not provide cost or pricing data...and our accounting records will not be made available for any U.S. Government or other auditors,’ and this is still their position.”

The cost/price analyst submitted a request for a technical evaluation, but received only the following response from the technical administrator,

“Although I did not complete a formal technical evaluation form, I reviewed the proposal and it was O.K.”

Even the contract specialist commented on the inadequacy of this technical evaluation. The cost/price analyst was given no evaluation of the quantitative and qualitative aspects of the proposal.

The cost/price analyst qualified his report with the statement,

“Based on the lack of information available to me, I am unable to make a positive determination of price reasonableness.”

Nevertheless, the contract was awarded to the Croatian contractor for the amount proposed. In its eagerness to award the contract, PNNL management appears to have overlooked the requirement to perform meaningful cost/price analysis, and disregarded the statement made by the cost/price analyst.

2. (Contract No. 282847; FFP; \$204,891) the cost/price analyst was prevented from performing an analysis of a proposal because no quantitative/qualitative detail was included in the proposal and no supporting data was submitted by the contractor. The proposal was inadequate. The cost/price analyst stated that he could not determine whether the proposal presents a fair and reasonable price. The cost/price analysis report stated that only \$21K of the \$205K proposed was supported by the documentation submitted by the contractor.

The cost/price analyst did recommend questioning the separately proposed overhead, G&A, and fee because the proposed labor rates were already fully burdened with overhead, G&A, and fee. The cost/price analyst explained that overhead, G&A, and fee had been proposed twice, once in the fully burdened labor rates, and a second time as separate indirect rates.

The technical evaluation said nothing about the quantitative and qualitative aspects of the proposal because no quantitative and qualitative aspects were proposed. The technical evaluation stated only that: (1) the proposed consultants and testing requirements should be identified, and (2) that if PNNL engineers were asked to do the work, it would cost more than the proposed cost. In addition, the file contains no meaningful sole source justification.

The contract specialist agreed with the cost/price analyst that based on the lack of information received, it was not possible to determine whether the price was fair and reasonable. Nevertheless, the contract specialist disregarded the cost/price analysis, and awarded the contract in the amount proposed without negotiations.

As a result of this negotiation, it appears that the Government paid twice for overhead, G&A, and fee. The contractor who received the award of this contract is well known at Hanford, and is known for regularly refusing to provide support for its proposals. In situations such as this, we recommend withholding the award of the contract until the required supporting documentation is submitted.

3. (Contract No. 354313; FFP; contract value \$277,178) the data received by the cost/price analyst was inadequate to support the proposal. The contractor submitted cost data supporting a 1995 proposal as support for its 1999 proposal. No detailed support of cost elements proposed in 1999 was submitted by the contractor. The cost/price analyst's report stated,

“All of the data supplied by the contractor in support of cost elements are dependent on claims made by (the contractor) rather than on reliable information. ...While none of the rates and factors appears excessive, none of the data supplied ...is sufficiently independent to offer assurances of fairness and reasonableness of the cost elements let alone the proposal as a whole. ...This analysis offers only very limited assurances of price reasonableness.”

The cost/price analyst's report questioned 12 percent of the cost proposed.

The technical evaluation stated that the quote met the technical requirements, but that the proposed increase in cost over the 1995 contract should not be accepted until it was verified.

There is no adequate sole source justification in the file. In fact, information in the file indicates that the items required could be provided by a number of vendors. The Memorandum of Procurement indicates that similar items are currently being manufactured by a specific vendor, and the 1995 contract was awarded on the basis of competition (four possible vendors had been identified). The technical evaluation does not discuss the idea that there is only a single possible source of the items.

The contract specialist awarded the contract to the sole source from which he solicited a proposal, and he gave the contractor the price it proposed. The file contains no indication that any attempt was made to have the vendor justify the increase in cost. The contract specialist disregarded the cost/price analysis and the technical evaluation.

4. (Contract No. 400728; FFP; contract value \$108,473) the contract file is not adequately documented. The file contains no technical evaluation, no cost/price analysis, and no documents showing there was adequate price competition.

In a record of a telephone conversation, the contract specialist stated that the contract was

“Orally competed between three suppliers. ...Received two responsive quotes. Awarded to the lowest responsive and responsible offeror.”

That brief three-sentence statement represents the total Memorandum of Procurement for this buy.

Other documents in the file show that only a small portion of the items purchased were “orally competed.” The major item in the contract was not competed, and there is no sole source justification in the file supporting the award of that item to the vendor.

In addition, it appears that this purchase was not entered into the computerized purchasing system. Accounts payable sent the following message to Procurement,

“I received an invoice from Technologies Integration on PO 400728 in the amount of \$101,338. The reason this is marked for high importance is that nothing in IPAP has been received yet and nothing has been accrued yet. Can you check the receiving for the below delivered items and request receiving if the items have arrived?”

It appears that internal controls broke down completely in this case, and that this buy fell through the cracks.

VIII. Performance Rating

“Excellent” - (With an explanation)

PNNL has shown improvement over the FY 1998 Self-Assessment, however, there continues to be problems associated with sole source justifications, effective utilization of cost/price analysis, and the lack of adequate technical evaluations to assist contract specialists in determining fair and reasonable prices for the products and services they are purchasing. PNNL has met all of the objectives that were laid out as part of the FY 1998 BMOP report, and given that fact, we felt PNNL had accomplished the metrics contained in the FY 1999 Self-Assessment. PNNL will have to once again improve on performance to continue this trend and assuredly the measurements and objectives for FY 2000 will be matched closer to RL's expectations of the PNNL procurement system.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

SECURITY

I. Functional Area of Review

Security -- Other than:

- (1) Unclassified Foreign Visits and Assignments, and
- (2) Special Access Programs and Intelligence Programs.

II. Objective of Review

To determine the extent to which the PNNL Security Program complies with the applicable Department of Energy (DOE) and Richland Operations Office (RL) directives (to ensure proper levels of protection are consistent with Departmental Standards to prevent unacceptable, adverse impact on national security) in the topical areas of Program Management, Protection Program Operations, Information Security, Nuclear Materials Control and Accountability, and Personnel Security.

III. Review Steps Performed

1. The Business Management Oversight Review of PNNL in the Functional Area of Security is conducted in conjunction with the Periodic Safeguards and Security Survey of PNNL. The Survey fieldwork continues several days past the time allotted for the Business Management Oversight Review, and thus additional items may be identified in the Periodic Safeguards and Security Survey Report that are not identified in this Business Management Oversight Review Report. In addition, the period for review for the survey report is November 15, 1997 through November 23, 1999 (two-year period versus one).
2. The Fiscal Year 1999 PNNL Self-Assessments in all five topical areas were reviewed, the PNNL Corrective Actions Plans (CAP) and revised CAPs were reviewed, and the PNNL quarterly corrective actions status reports were examined to determine the nature of past and present deficiencies.
3. The PNNL Director of Safeguards and Security Services (SASS) and other responsible staff members were interviewed. Documentation was reviewed in all five topical areas to include:
 - Indirect/Direct Budget Information

- Facilities and Operations Fiscal Year 2000 Performance Management Plan
- Fiscal Year 1999 PNNL SASS Work Plans
- PNNL Internal/Special Reviews of Security Infractions, Unclassified Sensitive Information and prioritization of those actions as well as path forward
- Training Records, Position Descriptions, Delegation Letters
- Internal Procedures, Standards Based Management System (SMBS): Safeguards and Security Management System Description
- Foreign Ownership, Control, or Influence (FOCI) Files to include four updated FOCI Packages
- RL Safeguards and Security Site Plan (SSSP), PNNL Performance Assurance Plan, PNNL Asset Protection Agreements
- Security Infraction Report Log and Occurrence Reporting Process
- Limited Area Reviews to include Access Controls and Repositories
- Lock and Keys
- Performance Tests
- Firearms Safety Records
- Master Automated Information Systems (AIS) Security Plan
- Operations Security Plans (OPSEC) and Assessments
- Material Control and Accountability Plan (MCAP) and Internal Material Control and Accountability Procedures
- Access Authorizations (Personnel Security Clearances) to include Pre-employment Process, and Security Clearance Terminations
- Security Education Briefings (lesson plans)
- Site Approvals for Classified Visits

IV. Results of Review

1. Based on the detailed review of PNNL's overall Safeguards and Security Program, it is evident that PNNL continues to take a pro-active approach to address safeguards and security concerns in a Program that is rapidly changing due to advances in the cyber world (greater dependency on electronic medium), major DOE HQ Policy changes, and the added attention to the DOE security world due to counterintelligence (CI) issues.
2. PNNL had 20 security infractions related to classified during the review period. PNNL has aggressively tackled this issue through a number of reviews/assessments to identify root-cause analysis. These reviews began in the arena of security infractions, and eventually branched out to unclassified sensitive information and foreign national visits and assignments. PNNL is currently prioritizing the deficiencies and corrective actions from these reviews/assessments and a number of actions are being taken to ensure PNNL personnel/line management takes responsibility for security. PNNL is taking a very positive step by elevating Security under the same realms of the

Integrated Safety Management Program, and has assigned Interim Field Representatives to champion this program.

3. PNNL continues to ensure the protection of classified information and special nuclear material and none of the weaknesses identified in this report represent a significant vulnerability to the DOE security interests or those of other government agencies.

V. Strengths:

FOCI: The primary FOCI contacts, the Contracts Specialist for the PNNL Contracts Department and the Security Specialist for Safeguards and Security Services, are well versed on FOCI requirements and have taken aggressive actions, when necessary, to resolve FOCI issues/concerns. No significant concerns were identified during the review.

Incident Reporting and Management: Procedures for reporting incidents of safeguards and security concerns and possible failures to properly protect specific kinds of information and materials held at PNNL have recently been included in PNNL's Subject Base Management System (SBMS). This allows all PNNL employees rapid access to the steps necessary to report such concerns.

PNNL SASS has initiated a new database system to track infraction/incident reporting. The new system affords tracking for any specific data point which includes such things as the descriptions of the incidents, including dates and times, various reporting information, Occurrence Reporting Processing System (ORPS) reporting information, responsible parties, and so on. The system is easy to modify to accommodate changes in the reporting requirements.

Self-Assessments: The PNNL SSAS has a well-established program to conduct detailed self-assessments and efficiently tracks findings and suggestions.

Sensitive Compartment Information Facility (SCIF): During this reporting period, PNNL upgraded the SCIF. All phases of the upgrade were accomplished with attention to detail, ensuring that all security requirements were met. This was a cooperative PNNL Programs and Security Project that was completed under cost and on time. The Project was reviewed by the DOE Headquarters Element responsible for certification of the SCIF; there were no findings. Also, the Project was completed without any lost-time injuries.

Control of Visits: PNNL recently identified that PNNL was not in compliance with DOE Directives in that an attendance sheet for attendees of meetings in classified conference rooms was not completed. Upon identification of this non-compliance, PNNL took immediate action to ensure that attendance sheets are available and the sheets list the attendee's name and security clearance level.

Nuclear Material Controls and Accountability: The PNNL Material Control and Accountability (MC&A) program is mature and functioning smoothly. PNNL's MC&A internal assessment and training programs are very good. Assessment and training records are comprehensive, well maintained, and complete. Organization and management responsibilities are well defined and structured to provide an effective implementation of DOE requirements. PNNL's graded safeguards implementation approach is consistent with the category and type of material holdings at the Laboratory.

Classified Matter Protection and Control (CMPC): As noted under IV. Results of Review, paragraph 2., above, PNNL had 20 classified-related security infractions during the review period. As part of the resolution of this issue, PNNL SASS was innovative in instituting the two-person rule regarding handling of classified matter and providing training on this concept.

Security Badges: PNNL is in compliance with the DOE policy for the issuance, storage, accountability and destruction of security badges. Access Control clerks charged with the responsibility for control, accountability and preparation of temporary badges were very knowledgeable and well trained in their assigned tasks.

Firearms Safety: The PNNL Firearms Safety Program effectively ensures that those utilizing firearms for harvesting of animals on the Hanford Site are very familiar with proper use of firearms and receive adequate training.

Classified Automated Information Systems (AIS) Security: An Information Systems Security Site Manager (ISSM) has been appointed in writing. The Computer Security Site Manager (CSSM) is knowledgeable of all required responsibilities and has attended the DOE AIS security courses as well as the annual DOE Computer Security Conference.

Information Systems Security Officers (ISSOs) have been appointed and a documentation review disclosed that all ISSOs and all AIS users had received appropriate classified AIS training. Code of Conduct statements were available for all AIS users and documentation was available to demonstrate that the required ongoing testing of systems was being accomplished.

The Master AIS Security Plan that addresses generic requirements for AIS systems has been developed, along with specific AIS Security Plans for each system. The plans were current, accurate and are re-certified as required.

All systems are located within Limited Areas and observations revealed that access to these areas was being adequately controlled. ISSOs/users are aware of the proper clearance, need-to-know, and visitor escort requirements.

Performance tests were conducted to determine if ISSOs/users could demonstrate proper handling, marking, storage, and disposition of classified matter. Users demonstrated appropriate methods for system clearing and sanitization as well as hard-copy

destruction. Emphasis was placed on the methods used to transfer matter between classified and unclassified systems. The tests revealed that overall users were aware and knowledgeable of the requirements and no concerns were identified in this subtopic.

Technical Surveillance Countermeasures (TSCM): Documentation reviews disclosed that TSCM services have been performed for all five locations. Procedures in place provide adequate direction to custodians and users of these facilities in order to ensure the security integrity of these facilities. Access is adequately controlled to these facilities. Appropriate signs are posted and all locations meet the physical security requirements or have appropriate deviations.

Communications Security (COMSEC): PNNL has formally appointed COMSEC Control Officers, COMSEC Custodians and Alternate COMSEC custodians for the two COMSEC accounts that they maintain. RL and DOE Headquarters have approved all of these positions and all personnel involved in COMSEC duties have been trained.

A COMSEC audit and TEMPEST RED/BLACK inspection was conducted on both COMSEC accounts July 21-23, 1999, by the DOE HQ Office of the Chief Information Officer. The audit/inspection disclosed no concerns or deficiencies in either account and both accounts were rated "excellent."

Operations Security Plans (OPSEC): The PNNL OPSEC program is a very well managed program, which meets all DOE requirements and in some instances exceeds them. The PNNL OPSEC program was the RL nominee for the 1998 National OPSEC Organizational Achievement Award and the 1999 National OPSEC Literature Award. As such, they have been selected in both cases as the DOE nominee. This is a significant accomplishment worthy of special recognition.

Pre-employment Checks: PNNL consistently completes a pre-employment check on every employee prior to a security clearance being granted.

Reinvestigation Program: PNNL is consistent in ensuring their employee's reinvestigations are current.

Security Clearance Termination Statements: PNNL is processing 93.3 percent of termination statements within the required time frame.

Security Education and Awareness: PNNL employees undergo a comprehensive security awareness briefing prior to being issued a badge.

VI. Weaknesses/Recommendations

Physical Security: Not all Limited Area Island walls extend from the floor to the structural ceiling as required by DOE Order 5632.1C.

Recommendation: For continued use of these locations for the storage and use of classified matter, PNNL must either extend the walls to the structural ceiling or establish equivalent means to meet the requirement allowed by the Order.

Incident Reporting and Management: PNNL does not follow the guidelines set in their own SASS procedures for handling the timeliness of security infraction reports. Subsequently, DOE F 5639.3, Part II (used as the final report on an infraction), is not received by RL in a timely manner. In addition, there are no specific timelines set for PNNL line management to complete their management critique of infractions, which further delays the receipt of infraction information by RL.

Recommendation: Guidelines should be set for PNNL line management in order to assure RL more timely receipt of infraction information. In addition, PNNL SASS should follow their guidelines.

Nuclear Material Control and Accountability: PNNL's measurement and measurement control program contains gaps in its implementation. Documentation to demonstrate measurement personnel and equipment qualification/validation is weak and needs to be formally documented and established.

Recommendation: All applicable elements of the measurement and measurement control requirements in DOE Order 5633.3b (now DOE O 474.1 and DOE M 474.1-1) should be reviewed against existing procedures and systems, re-evaluated for completeness, and improvements implemented as necessary.

Pre-employment Waivers: Approximately 59.7 percent of the employees hired by PNNL who required a security clearance were hired before their security clearances were granted and no pre-employment waiver was approved. Only 0.4 percent of those who were hired prior to a security clearance being granted were processed in accordance with the DOE Order that requires an approved pre-employment waiver.

Recommendation: The Pre-employment waiver is the responsibility of PNNL Human Resources (HR) to provide to DOE. The request for a security clearance is processed by PNNL Security. Better communication between these organizations is needed to ensure clearances are granted prior to an employee entering on duty.

Pre-employment Investigations: Derogatory information discovered by PNNL HR in the pre-employment investigation is not reported to PNNL SASS or RL. PNNL HR indicated that their legal department had advised that derogatory credit information that resulted from the pre-employment investigation could not be provided to PNNL SASS or RL. RL's Office of Chief Counsel reviewed the Fair Credit Reporting Act and indicated there was no prohibition against providing the information to PNNL or RL.

Recommendation: PNNL HR should forward all derogatory information revealed as a part of the pre-employment investigation to PNNL SASS so the information can be forwarded on to RL.

Security Clearances: When an employee requires both a DOE and U.S. Department of Defense (DoD) security clearance, PNNL is granting the DoD clearance prior to the DOE clearance.

Recommendation: PNNL should ensure up front that both DOE and DoD security clearances are required and process the DOE clearance first. They should not initiate the processing of a DoD clearance until the DOE clearance has been granted.

VII. Performance Rating

“Excellent” – Although there are a number of recommendations, none of these are perceived to be serious deficiencies in the PNNL program regarding the protection of DOE Security Interests. The PNNL Program has a solid foundation and PNNL actively identifies possible problematic areas through self-assessments and root-cause analysis, and implements corrective actions.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

**UNCLASSIFIED FOREIGN VISITS
AND ASSIGNMENTS**

I. Functional Area of Review

Unclassified Foreign Visits and Assignments

II. Objective of Review

Assess the adequacy and performance of the PNNL Unclassified Foreign Visits and Assignments program by reviewing and evaluating the automated Foreign National Activities Coordination (FNAC) process and interviewing responsible individuals and foreign national hosts.

III. Review Steps Performed

1. Reviewed the automated FNAC process to determine if the system meets the requirements in DOE Order 1240.2B, Unclassified Visits and Assignments by Foreign Nationals.
 - Reviewed Host training materials
 - Reviewed Host/Escort pre-brief and post brief materials
 - Checked records to determine completeness, level of foreign national access to facilities and computers, and approved working hours
2. Interviewed the FNAC staff to determine if the steps used to process visits and assignments were consistent with the procedures in the Standards-Based Management System (SBMS).
3. Interviewed three hosts regarding their responsibilities and knowledge of the assignees they were responsible for.

IV. Results of Review

Based upon the review of PNNL's foreign national visits and assignments program, PNNL is in compliance with the requirements specified in the DOE Order and their SBMS procedures.

1. A review of the records indicated that they were accurate and complete. Paper records are not kept on visits, but the record is retained in the database.
2. The PNNL FNAC staff is knowledgeable and conscientious. The automated system allows them to stay on top of the over thousand annual visits and assignments of which over 60 percent are from sensitive countries.
3. The Hosts were fairly knowledgeable of the foreign national assignees they were responsible for. One host did not initially recollect a particular foreign national, until the foreign national was clearly identified. The Host admitted that the foreign national was working in another building and that another person would be a more appropriate host. The change in host assignments was completed within a day.

V. Strengths

The PNNL automated FNAC system provides a reliable mechanism to acquire the necessary approvals by various required officials in different programs and departments, all utilizing electronic signatures. All actions are retained in the database for each foreign national. Without this system, it would be impossible to process the approximately 1,000 annual visits/assignments. When changes are made to a visit/assignment request, the system automatically wipes out all previous approvals so that the prior approving officials can be aware of the changes and reassess the visit for potential impacts.

VI. Weaknesses

1. The PNNL FNAC staff sends pre-briefing and post-briefing materials to each host over the PNNL network for the PNNL counterintelligence (CI) organization. Responses are requested in 7 days. A few hosts, however, do not complete this material in a timely manner, and it could be weeks before a response is received. Reminders are periodically sent to the hosts until a response is received. Since the FNAC staff is in the Security organization and briefings are considered a CI responsibility, enforcement of the timely completion is not done. Follow-up on these requests will be performed by the CI organization when staff vacancies are filled.
2. Hosts may not be informing the FNAC staff in a timely manner when a particular foreign national could be more appropriately hosted by another staff member. This action would help assure adequate oversight and formally document what is actually being done.

VII. Recommendations

1. The PNNL CI organization should take a more active role in retrieving delinquent briefing packages until this function has completely transitioned into their organization.

2. PNNL hosts should provide timely notification to FNAC staff of any changes that should be made in their hosting responsibilities.

VIII. Performance Rating

“Excellent” – Although there are some minor inconsistencies in the PNNL foreign visit and assignment program, the overall program excels in processing, approving and tracking visitors and assignees.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

**SPECIAL ACCESS PROGRAMS AND
INTELLIGENCE INFORMATION**

I. Functional Area of Review

Special Access Programs and Intelligence Information

II. Objective of Review

Assess the Pacific Northwest National Laboratory (PNNL) program for the protection of Special Access Programs (SAP) information and Sensitive Compartmented Information (SCI). This review did not look at the Sensitive Compartmented Information Facility (SCIF) accreditation or the storage of material within the SCIF.

III. Review Steps Performed

1. Reviewed the Program Guides, Program Security Manuals, and Classification Guidance for the current SAPs.
 - Determined if the classification guidance was approved by the Office of Nuclear and National Security Information.
 - Determined if PNNL was in compliance with the document accountability and inventory requirements specified in the Program Security Manuals.
 - Determined if SAP non-disclosure agreements were appropriately documented for individuals “read-on” to the program.
 - Evaluated access control measures.
2. Reviewed documentation regarding SCI authorization
 - Reporting Business & Personal Travel
 - Briefings and Debriefings Conducted
3. Interviewed the Manager, International Technology Assessment Group and the Special Security Officer (SSO) regarding their specific responsibilities.

IV. Results of Review

Based upon the review of PNNL's Special Access Program and Intelligence area, the requirements for these programs are being successfully complied with.

1. The SAPs have detailed classification guides approved by the appropriate sponsoring agency. The accountable SAP documents have been inventoried as of October 30, 1999, and all are stored in a repository with limited access in an Omni Lock controlled room within the EESB Limited Area.
2. There are 153 personnel who have SCI access, 146 PNNL employees and 7 RL employees. Records indicate that 17 individuals were debriefed during past thirteen months and 29 individuals provided indoctrination briefings. Personnel who travel to other countries for either business or personal reasons notify the SSO prior to departure and receive a briefing. The SSO relies primarily on the individual for notification of foreign travel.

V. Strengths

PNNL maintains a program that provides the proper strict controls that are necessary to protect and control information related to the Special Access Programs. The SAP Program Plan, Security Manual and Classification Guidance have been approved by the proper officials. PNNL is in compliance with the security measures provided in this documentation.

VI. Weakness

The notification process for staff members possessing an SCI clearance and traveling to a foreign country could be improved and formalized to assure stricter compliance with the Director of Central Intelligence Directive (DCID) 1/20 requirements. DCID 1/20 requires that itineraries are submitted in advance of travel and a defensive security briefing provided to travelers. Relying on the staff member when there are potential automated means of notification would strengthen this area.

VII. Recommendation

Notification of official foreign travel should be automatically sent to the PNNL SSO at the same time as the travel is sent for approval in the Foreign Travel Management System. This notification would ensure that travelers have the necessary awareness regarding potential threats.

VIII. Performance Rating

“Excellent” – PNNL controls and protection of information in the SAPs and SCI area are consistent with all requirements.

**RICHLAND OPERATIONS OFFICE
BUSINESS MANAGEMENT OVERSIGHT REVIEW
OF BATTELLE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)**

CLASSIFICATION/DECLASSIFICATION

I. Functional Area of Review

Classification/Declassification

II. Objective of Review

Assess the adequacy and performance of the PNNL Classification and Declassification functions by reviewing and evaluating a sample of the product generated during the fiscal year.

III. Review Steps Performed

1. Reviewed a representative sample of documents declassified by the National Security Analysis Team during FY 1999. Steps taken to assess the declassification performance included:
 - Verifying that documents were appropriately declassified and/or retained,
 - Verifying that documents which required deletions were correctly deleted,
 - Verifying that correct guidance was utilized in making decisions,
 - Verifying that two authorized individuals were involved in making the decisions, and
 - Validating that documents were being selected and reviewed for quality.
2. Reviewed a representative sample of documents classified by PNNL authorized classifiers during FY 1999. Steps taken to assess the classification performance included:
 - Verifying that documents were classified at the appropriate level,
 - Verifying that documents were classified using correct classification guidance,
 - Verifying that documents were classified by an authorized derivative classifier, and
 - Validating that documents had the correct classification markings.

IV. Results of Review

Based upon the performance reviews of the National Security Analysis Team and the PNNL Classification Office functions, PNNL has satisfactorily met the intent of the requirements for these specific areas. The detailed results of the performance assessment are provided below:

1. One hundred and forty-six (146) documents were selected and reviewed as part of the oversight of the National Security Analysis Team during FY 1999. Although a few minor questions arose during the reviews, most were procedural in nature. Satisfactory resolution of all questions was promptly made. In general, the declassification product was of high quality and demonstrated a commitment to excellence.
2. Fifteen (15) documents were selected for review from 3 organizations within PNNL. Although there were some minor discrepancies found in the marking of documents, all documents reviewed were classified at the appropriate level and category, by an authorized individual.

V. Strengths

The PNNL National Security Analysis Team has a very senior and knowledgeable reviewer staff. They are reviewing and providing more information to the public than any other site in the complex, and they have a growing reputation throughout DOE of doing high quality reviews. The team provided significant assistance in response to the discovery process in the Berg litigation.

The PNNL Classification program is also composed of knowledgeable reviewers. Knowledgeable individuals who perform classification reviews are the “gate keepers” between the protection and the release of information. In the past year, the PNNL Classification Office was called upon by the DOE Office of Nuclear and National Security Information to assist in the writing and review of new classification guidance in the nuclear materials processing, counterintelligence, and intelligence areas. This is a demonstration of the confidence that DOE Headquarters has in the knowledge of the Classification staff.

The PNNL Classification Office developed a Portion Marking Guide that provides realistic guidance to the Derivative Classifier on how to appropriately mark all types of documents from normal correspondence to complex technical documents. This guide has been requested by several other DOE sites for use as a reference tool for portion marking.

VI. Weakness

The PNNL Classification Office provides quality assurance oversight of declassified documents for the National Security Analysis Team. During this past fiscal year, the

Classification Office staff member who routinely performed these reviews took another assignment. Two other individuals within the National Security Analysis Team were granted quality assurance oversight authority for the Classification Office. Although these selected individuals are knowledgeable, the independence of the oversight is no longer apparent.

VII. Recommendation

The PNNL Classification Office should verify the quality of a portion of the documents reviewed by the National Security Analysis Team who have been granted quality assurance authority by the PNNL Classification Office.

VIII. Performance Rating

“Excellent” – PNNL performance in the Classification and Declassification areas has exceeded expectations. Documents are generated and classified appropriately. Documentation of declassification reviews is of a high quality and the product is in a format ready for public release.



Department of Energy
Washington, DC 20585

November 9, 1999

Mr. Robert M. Rosselli
Assistant Manager for Science and Technology
U.S. Department of Energy
Richland Operations Office
825 Jadwin Avenue
Richland, Washington 99352

Dear Mr. Rosselli:

For fiscal year 1999, the Pacific Northwest National Laboratory's overall performance on Office of Science (OSC) science and technology programs is rated as Outstanding. This rating relates to the scale that includes Unsatisfactory, Marginal, Good, Excellent, and Outstanding. It is a weighted average of performance evaluations provided by each OSC program office, with the budget for Pacific Northwest from each office as the weighting factor. This summary rating combines overall performance evaluations for program areas supported by the OSC offices of Basic Energy Sciences (BES), Biological and Environmental Research, Computational and Technology Research, and Fusion Energy Sciences.

Although the overall rating is Outstanding, significant concerns are expressed by the Office of Basic Energy Sciences over the laboratory's ability to balance the coupling between BES' Metal and Ceramic Sciences program and technology programs funded by other offices of DOE and the Electric Power Research Institute. Also, please note that for the third year in a row, the lowest scores received by the laboratory are for Program Management, which again has received a rating of Excellent, rather than the Outstanding received for the other performance measures.

Enclosure 1 summarizes the overall OSC weighted average ratings by each goal. Enclosure 2 presents the individual OSC Programs' ratings of the laboratory's performance for each of the performance evaluation factors. Also enclosed are full narrative evaluations from each program area.

Sincerely,

A handwritten signature in black ink, reading "Martha A. Krebs", is positioned above the typed name.

Martha A. Krebs
Director
Office of Science

Enclosures

Enclosure 2

PACIFIC NORTHWEST NATIONAL LABORATORY
FY 99 RATINGS OF EACH GOAL BY EACH OSC PROGRAM
G = Good; E = Excellent; O = Outstanding

	Goal 1: Quality	Goal 2: Relevance	Goal 3: Program Mgt.	Goal 4: Facilities	Overall Program Rating	Overall ER Weighted Average
BES	E / 3.40	E / 3.20	E / 3.00	N/A	E / 3.30	
BER	O / 3.78	O / 3.97	E / 3.38	O / 3.80	O / 3.73	
CTR	O / 3.93	O / 3.93	O / 3.90	O / 3.86	O / 3.91	
Fusion	O / 3.7	O / 3.8	O / 3.7	N/A	O / 3.73	
OVERALL	O / 3.74	O / 3.87	E / 3.37	O / 3.80		O / 3.69

Enclosure 1:

**OFFICE OF SCIENCE
PACIFIC NORTHWEST NATIONAL LABORATORY EVALUATION
FY 99 OSC WEIGHTED AVERAGE RATINGS BY GOAL:**

Overall Consolidated Rating: Outstanding
Weighted Average Score: 3.69

Goal: 01 Quality of science, technology and engineering

Consolidated Rating: Outstanding
Weighted Average Score: 3.74

Goal: 02 Relevance to national needs and agency missions.

Consolidated Rating: Outstanding
Weighted Average Score: 3.87

Goal: 03 Effective and efficient Research Program Management

Consolidated Rating: Excellent
Weighted Average Score: 3.37

Goal: 04 Performance in the operation and construction of major research facilities

Consolidated Rating: Outstanding
Weighted Average Score: 3.80

Patricia M. Dehmer

Overall rating for BES-supported activities at PNNL: Excellent (3.3)

Dehmer Goal 01: Quality of Science: Excellent (3.4)

The quality of science for the Materials Sciences program at PNNL, based on the on-site peer review of June 9-10, 1999, is "excellent" overall -- "outstanding" in some areas and less so in other areas. A recent achievement and an award support this judgment. It was discovered that high quality, close-packed and oriented nanostructural materials based on self-assembled monolayers of functional molecules on ordered nanoporous can be produced and efficiently assembled. This work was co-funded with the Office of Science Laboratory Technology Research Program and the Office of Environmental Management. Recognition included a feature article in Science and a 1998 R&D 100 Award.

One of the external peer reviewers at the on-site peer review of June 9-10 noted "The overall impression of the research was very positive. All of the projects are state of the art research endeavors." However, other reviewers comments were mixed. These comments have been provided to the Laboratory management.

The Chemical Physics program has supported PNNL for less than a decade. The fundamental research at the laboratory is directly related to the environmental mission of the agency including those specifically relevant to the Hanford site, the location of the PNNL facility. The chemical physics research performed through this program is directed towards interfacial science and includes, amongst others, fundamental studies of the interaction of liquid-interfacial chemistry, energetic processes in condensed phases, kinetics of surface reactions, as well as theoretical efforts related to interfaces. As judged by external peer reviews, the quality of the staff and the science performed is truly excellent. Reviewers have made comments that some of the work at PNNL will require modification to textbooks and that other aspects of the program are truly "world-class." The program is technically very relevant and of very high quality.

The BES Geosciences program at PNNL supports excellent research on basic theoretical and experimental surface geochemistry. The program underpins technologies important for the Department's environmental missions. One project was rewarded by a citation of excellence from an external panel of experts at the Geosciences Symposium in February 1999.

Dehmer Goal 02: Relevance to DOE missions or national needs: Excellent (3.2)

The coupling between the Metal and Ceramic Sciences program with technology programs at PNNL, such as those funded by the DOE Offices of Energy Efficiency and Fusion Sciences as well as those funded by the Electric Power Research Institute, is extremely tight. In fact, coupling is of such an extent that there is concern that the research climate at PNNL may not be the most conducive to enquiry driven fundamental science. There may not be a maximum reasonable opportunity to exploit innovative and creative cutting edge or frontier research that may not be consistent with the preconceived milestones of these technology programs. The need for an appropriate balance is discussed under criterion # 3 below.

A major technical concern -- and a mission that is a critical national need -- is the required 'clean-up' of facilities. The BES/Geosciences supported program is providing the theoretical foundation for understanding how metals and other contaminants bind to mineral surfaces, and therefore, how they can be removed. The program also has built the foundation for a number of successful applications to the Office of Environmental Management in the Environmental Management Science Program in FY 1999.

PACIFIC NORTHWEST LABORATORIES

Patricia M. Dehmer

Dehmer Goal 03: Effective and efficient research program management: Excellent (3.0)

The Metal and Ceramic Sciences under Basic Energy Sciences is concerned about the excessive coupling between the work it supports at PNNL and the needs of the co-sited applied programs at the laboratory to comply with their milestones. One of the peer reviewers from the on site peer review of June 9-10 stated, "The program makes effective coupling with technology oriented programs and are able to leverage the support from Basic Energy Sciences. However, this close connection also carries some risk that the management should constantly address. The research must be of intrinsic value to basic science and [be such that it] would be justified and conduct[ed] in the absence of the associated applied activities." After raising this concern, which is shared by BES/Metal and Ceramic Sciences program management, this reviewer stated, "The management appears to have controlled this to date." However, BES/Metal and Ceramic Sciences program management is not as confident as this reviewer that PNNL Management has an appropriate concern for achieving an optimal balance and that this matter is being properly controlled. Besides the concerns that have been raised above, it is noted that the publication of a Research Assistance Task Force report partially supported by BES/Metal and Ceramic Sciences was not submitted until November 4, 1998 -- more than six months after the initial meeting of March 1998. The manuscript for this report was not accepted for publication until February 22, 1999 -- eleven months following the initial event, thus diminishing its value. It appears that this delay was caused by the urgent need to fulfill the needs of the Electric Power Research Institute, which also funds research under the Principal Investigator for this Research Assistance Task Force and which also was a co-funder of the subject Research Assistance Task Force.

"Another concern," voiced by the above reviewer, and shared by the BES/Metal and Ceramic Sciences program office, "arises because of the relatively small size of the Basic Energy Sciences program in [PNNL's] Materials Sciences. The senior staff appears to be spread over a number of related but separate topics, often of both basic and applied nature. In cases where information was provided, the senior investigators appear to spend only about 30% of their time on an individual project, with much of the work being conducted by post-doctoral and graduate students. There is a danger that, over time, the senior staff may experience 'burnout' or unhealthy levels of stress." On balance, the spreading thin of this program is in some part attributable to the overall decline in BES/Metal and Ceramic Sciences funding over the last several years.

With respect to the chemical physics program, laboratory management has been quite responsive to Departmental needs. Recently, concerns involving the interaction between theorists and experimentalists have been discussed. Experience has shown that those laboratory programs that have a strong interaction between these groups have superior programs. The laboratory has re-arranged the physical location of the groups to improve the potential for stronger interactions.

Dehmer Goal 04: Success in construction and operation of facilities:

Not Applicable

PACIFIC NORTHWEST LABORATORIES

N. Anne Davies

Associate Director's Summary:

The Pacific Northwest National Laboratory (PNNL) fusion-related efforts continue to be focussed on the most important tasks of the fusion materials program. The laboratory led the presentation of the composite materials program for the 1999 Fusion Energy Sciences Advisory Committee (FESAC) Panel program review. They have demonstrated leadership in management of the DOE/Monbuscho (US/Japan) collaboration on fusion materials. They remain at the forefront of research on silicon carbide composite materials, and have made important contributions to the vanadium alloy, ferritic steel, and modeling materials program elements. The overall quality of Pacific Northwest National Laboratory (PNNL) work on fusion materials continues to be outstanding.

Goal 1: Quality of Science

Reviewer Wiffen : (SCORE = 3.7) PNNL continues to contribute research of the highest quality in the program to develop a knowledge base on fusion materials. They provide cutting edge research on silicon carbide composite materials, and also provide important contributions to the vanadium alloy, ferritic steel, and modeling program elements. Steady progress is being made on all advanced materials program tasks. The overall quality of work on the fusion materials program continues to be outstanding.

Davies Goal 02: Relevance to DOE Missions or National Needs

Reviewer Wiffen : (SCORE = 3.8) The Advanced Materials Program is a key element of the US Fusion Program. PNNL continues to focus efforts on the most important tasks of the Fusion Materials Program. They are responsive to DOE and fusion community input in setting the direction of their work.

Davies Goal 03: Effective and Efficient Research Program Management

Reviewer Wiffen : (SCORE = 3.7) PNNL has taken responsibility in leading the US Fusion Materials Program for SiC/SiC Composite materials and in managing the DOE/Monbuscho (US/Japan) collaboration on fusion materials. PNNL has also shared with DOE the task of conducting programmatic discussions and planning within the Fusion Materials Program Leaders Group. They continue to perform in superior manner in these roles. PNNL took the lead and did an excellent job in organizing the US-hosted International Conference on Fusion Reactor Materials, to be held in early FY2000. PNNL made important contributions to the development of a roadmap for the Fusion Materials Program. They also shared leadership of a planning activity for a possible program redirection that will put greater emphasis on the theory/modeling of materials behavior, and integration of the theory and modeling with the experimental program.

Davies Goal 04:

Not Applicable

David B. Nelson

Kitchens Goal 01:

The quality of the Grand Challenge in Chemistry, whose funding unfortunately drops to ~50% in FY'00 due to the DOE Grand Challenges Program demise, has been out-standing. The work has made it possible to accurately calculate the chemistry of transuranic elements for many purposes including environmental remediation by including relativistic effects. The codes for high performance computers have been developed with the best software engineering practices and have been used to test many of the software tools developed in another part of the MICS report. This quality software is now used by many chemists around the world. This original research has been now substained for over 7 years. It is truly outstanding work.

Kitchens Goal 02:

This project is smack on the mission needs of the Department and the national environmental goals. It pertains to advancing our understanding of fundamental science and it can and has been used to strengthen science education.

Kitchens Goal 03:

I believe the management of the scientific effort at PNNL has been effective and efficient. The plan for FY'00 for the orderly termination of the effort is in place and I expect it will be met as the effort in pervious year's has been been within budget and on schedule. The work has met the expectations of our Office.

Kitchens Goal 04:

This Goal is outside the MICS program - but the new EMSL building building seems to have well and meets the environmental needs of the MICS workers.

Scott Goal 01:

PNNL is involved in several projects that were initiated under the DOE2000 program. Specifically, they support several R&D projects-electronic notebooks, collaborative session management, and collaboratory interoperability framework and have a project that is part of the ACTS Toolkit-Global Arrays. All these efforts involve integrated activities across multiple laboratories and organizations. Their work is outstanding and the contribution to the MICS program in their respective areas is very valuable. Their commitment to the concept and implementation of collaborative technology is clear by virtue of applying their experience to the EMSL facility-it is a core part of the facility with the remote operation of the NMR instruments becoming more and more popular for users. Their work is excellent and their contribution to the enabling tools for collaboratories is outstanding. They are well recognized in the field of collaborative technologies. Over the past year they organized and conducted a successful workshop on collaborative problem solving environments that brought together researchers from a wide range of disciplines supported by a number of funding sources. The workshop is being documented in a report and a number of attendees agreed to work together to advance some of the ideas generated at the workshop, with PNNL providing leadership.

Scott Goal 02:

Partnering across science and technology programs is an important element to the structure and goals of the MICS program that supports these projects. PNNL fully supports this partnering and provides effective championing of this goal with in the broader community. Under the electronic notebook, the goal is to design a modular, extensible notebook architecture and define a base set of notebook functionality. The acceptance and value of the work is attested to by the large number of users who have adopted the early reference implementation of the notebook for use and by the interest of the Collaborative Electronic Notebook Systems Consortium, with their efforts to create and expand the

PACIFIC NORTHWEST LABORATORIES

David B. Nelson

markets for scientific laboratory software.

Scott Goal 03:

These projects involve planning across multiple organizations. This is done well and appropriate milestones have been met. From a management perspective, they have shown leadership in promoting a cohesive collaboration environment across the R&D projects and the pilot laboratories. Their activities are a positive contribution and they have also made important contacts in the research community outside of DOE who are pursuing R&D in the same or similar areas.

Scott Goal 04: Indicator 01

While the work supported by the DOE 2000 projects does not include operation, the influence of the direction of the projects has been very influential in the operations and the tools developed there.. At the last review of projects proposed for the NMR instruments, forty percent plan to rely on only remote operation. A number of others plan to visit for the first operation, then rely on remote operations.

PACIFIC NORTHWEST LABORATORIES

Aristides Patrinos

Elwood Goal 01: Science - 3.8

The ARM publication rate is excellent, and ARM scientific objectives and accomplishments are widely respected. PNNL investigators have taken leadership roles in the NABIR program including the coordination of field research at two UMTRA sites. PNNL researchers in environmental microbiology and geochemistry are widely regarded as highly innovative and highly productive. The integrated assessment program at PNNL Washington office continues to be the leader in the community for economic and scientific analysis of global change options.

Elwood Goal 02: Relevance to DOE missions and National Needs - 4.0

The Global Change Program is a major DOE program. The Atmospheric Radiation Measurement Program is addressing the role of clouds in climate, which is a major uncertainty in climate prediction. The Technical Strategy Project led by Jae Edmonds and John Clarke is not only relevant but in some ways out ahead of DOE in strategic thinking about technologies needed to be prepared for a greenhouse-gas-constrained energy system should it be desirable sometime next century.

Elwood Goal 03: Research Program Management - 3.4

PNNL's leadership role in DOE Environmental Meteorology Program (EMP) is outstanding. The integrated assessment program leverages personnel in Washington with experts around the world. EMSL has effectively made unique instrumentation and computer resources available to a broad scientific community, and they have consistently worked to promote the use of the facility and to operate more efficiently. A recent internal review of the ARM infrastructure, while noting the many achievements of the infrastructure also identified management problems. DOE is restructuring the ARM project in order to achieve a more efficient operation.

Elwood Goal 04: Success in construction and operation of facilities - 3.8

In FY 99 the number of EMSL users showed a marked increase over FY 98. Also user satisfaction with the operation of the EMSL (as indicated in user surveys) is over 85%.

Frazier Goal 01:

The overall scientific quality of Life Sciences research at PNNL has been high especially in the areas of microbial genomics and mass spectrometry. PNNL is recognized leaders in their fields.

Frazier Goal 02:

Overall, PNNL needs to make a stronger effort to ensure that their ongoing and proposed Life Sciences research addresses DOE mission needs. PNNL has had some recent success in responding to calls for new research in the Low Dose Radiation Research Program. Mass spectrometry research needs to maintain a stronger focus on DOE mission needs. New Environmental Health initiatives also need to consider their relationship to the needs and directions of the Biological and Environmental Research Program.

Frazier Goal 03:

While PNNL has strong individual scientists conducting Life Sciences research, there is a need for stronger scientific management and coordination of Life Sciences research at PNNL. This will likely require identification of candidates from outside PNNL.

Frazier Goal 04:

not applicable

Hirsch: Goal 01:

The structural biology program has produced outstanding research and is highly productive, as is the measurement science project.

Hirsch: Goal 02:

The structural biology program is highly relevant to the DOE mission to make major user facilities available to the national research community.

Hirsch: Goal 03:

The structural biology and measurement science programs are well managed.


Hirsch: Goal 04:

Not applicable

MEMORANDUM

November 9, 1999

For: Terry L. Davis, Contract Administration Officer,
Richland Operations Office

From:  Marvin I. Singer, Senior Advisor and Director of Advanced Research,
Office of Fossil Energy

Subject: Pacific Northwest National Laboratory Performance Evaluation, FY 1999
Category: FE R&D

Summary

Two Field-Work-Proposals were funded for Solid Oxide Fuel Cell Research and Development work.

1. Contractor Project Number 22407: Advanced Materials Development for Solid Oxide Fuel Cells

The purpose of this program was to 1) develop or improve the current state-of-the-art interconnection and electrode materials with emphasis on improved electrical, thermal, and electrochemical properties and 2) develop new materials for electrodes and interconnections and alternative low-cost fabrication methods.

The program consisted of three tasks:

1. Development of a Co-Sinterable Interconnect
2. Low-Cost Fabrication of SOFC Materials and Components
3. Cathode Interface Modification and Testing

Achievements in FY 99:

- Developed an understanding for the mechanism of sintering in La(Sr)CrO₃
- Developed several interconnect compositions optimized for all requirements (conductivity, stability, sinterability, mechanical properties) based on V, Cu, and Co additions.
- Determined role of Cu and V for sintering enhancement
- Developing method to model thermal expansion, lattice parameters and chemical coefficient of expansion of interconnect as design tool.

- Continued work on co-sintering
- Submitted 9 papers for publication

2. Contractor Project Number 28024: Intermediate Temperature Solid Oxide Fuel Cells

The purpose of the research is to develop materials for and test reduced temperature (600-800°C) solid oxide fuel cells. A major goal of this program is develop and characterize materials for electrolytes, anodes, and cathodes, and to investigate electrochemical processes and stability of the materials and cells that will be used at intermediate temperatures.

The Program consisted of five Tasks:

1. Electrolyte Development and Testing
2. Electrode Development
3. Seal Development
4. Metallic Interconnect Development
5. Fabrication

Achievements in FY 99

- Developed method for aqueous processing of lanthanum gallate
- Determined viability of making lanthanum gallate mixed conductor
- Developing program plan (white paper) on low-temperature interconnects
- Completing single cell test stands capable of testing using a variety of fuels. Three test stands running by the end of August
- Developing new substrates (LaFeO_3) for supporting thin lanthanum gallate
- Submitted two papers for publication
- Applied for one patent

Goal 01 Quality of Work

Pacific Northwest National Laboratory (PNNL) exhibited a professional level of innovativeness, originality, and creativity. Research productivity was substantial. Leadership in the scientific community was rapidly evolving. The number of publications submitted is high for one year's work.

Goal 01 Score: 3.5

Goal 02 Relevance to DOE missions or national needs

Relevance of the work to DOE missions is high. The relevance of the PNNL work in these programs is analogous to that of Solid Oxide Fuel Cell Technology which is substantial.

The overall impact of this young program has been moderate with high potential.

Goal 02 Score: 3.6

Goal 03 Effective and efficient research program management

The management of this program has been aggressive and proactive. Among the best in the Solid Oxide Fuel Cell Technology Program.

Goal 03 Score: 3.8

Goal 04 Success in construction and operation of facilities

The majority of this work is Laboratory R&D with little facility construction. Construction of three test stands was started.

Goal 04 Score: N/A

DEPARTMENT OF THE AIR FORCE
AIR INTELLIGENCE AGENCY

Mr. Adrian Roberts
Interim Laboratory Director
Battelle Pacific Northwest National Laboratory
PO Box 999
Richland WA 99352

Colonel James C. Watkins
AFIWC/BL
102 Hall Blvd Ste 214
San Antonio TX 78243-7020

Dear Mr. Roberts

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Mr. Mark A. Whiting
Ms. Marie Whyatt
Ms. Pam Novak
Mr. Doug Nousen
Mr. Gene Luczynski

The SAFO concept was both innovative and very timely in that it directly addresses not only an Air Force need, but more importantly, a DoD need as expressed by the Honorable Dr. Hamre, Deputy Secretary of Defense, in a September 1998 memo to all the services and agencies. Your team's innovative ideas, spirit, and excellent skills are a great resource and reflect highly on the capabilities of your entire organization. Please extend our sincere thanks to the SAFO team leader, Mr. Whiting, and his outstanding team for their efforts in making the SAFO initiative successful.

Sincerely


JAMES C. WATKINS, Colonel, USAF
Commander

cc:
Mr. Dave Lee, Battelle, Mngr, Data & Knowledge Engr

November 29, 1999

NOTE TO: Theodore N. Turpin, Jr
Richland Operations (RL)

SUBJECT: Performance of Battelle in the Management and Operation of Pacific Northwest National Laboratory (PNNL) for Fiscal Year 1999

This provides Office of Nuclear Energy, Science and Technology (NE) input to your evaluation of Battelle's PNNL performance for fiscal year 1999. Overall, Battelle's PNNL performance in support of NE programs is rated **Excellent**. PNNL NE-related activities focused on two programs: Isotope Production and Distribution; and, Maintenance of the Fast Flux Test Facility (FFTF). Specifically:

PNNL Efforts Related to the FFTF Program - Overall Excellent

Planning and Analysis - Excellent

- PNNL was thorough and timely in completing the "Program Scoping Plan for the Fast Flux Test Facility". The efforts took considerable communications and collection of information from government agencies, commercial companies, and foreign entities.
- PNNL management is complemented for their professional job in presenting the Scoping Plan to the NERAC in August, 1999. The efforts were instrumental to the Secretary of Energy's decision to proceed with a programmatic environmental impact statement including the FFTF operations as an option.

Project Office Management - Excellent

- PNNL continued to successfully manage the FFTF Standby Project Office which completed a variety of studies and analyses. The Project Office has been very responsive and complete with the responses to numerous requests from DOE.

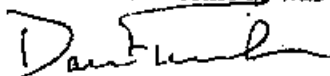
PNNL Efforts Related to the Isotope Program - Overall Excellent

Support for Customer Interface and Privatization - Excellent

- PNNL performed limited work for the Isotope Programs in FY 1999. PNNL's performance regarding customers interface for sales of yttrium-90 and transition and support of the privatization of Y-90 to the private sector was excellent.

Production Operations Efficiency - Good

- PNNL's efficiency of operations is rated good. Production unit cost for processing Y-90 did not reflect a decline in expenses due to increase in volume as was anticipated.



Dan Funk

FFTF Program Manager, NE-40

cc: Al Farabee
Rod Almquist
John Pantaleo
files



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**PERFORMANCE EVALUATION OF BATTELLE FOR THE MANAGEMENT AND
OPERATION OF THE PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL)
FOR FY 1999**

In the Commercial Light Water Reactor (CLWR) Project of Defense Programs, PNNL is assigned responsibility for the design, development, licensing and regulatory support of the TPBAR concept; and procurement of components of a Tritium Producing Burnable Absorber Rod (TPBAR) that will be irradiated in one or more commercial nuclear reactors licensed by the Nuclear Regulatory Commission. These TPBARs that produce tritium as the primary product, once irradiated, will be taken to the Tritium Extraction Facility (TEF) in Savannah River where the tritium will be extracted, collected and sent to a processing facility to become part of the nation's stockpile of tritium. PNNL is also assigned Project responsibility for the science and modeling of the performance parameters for the TEF. As the designer of record for the TPBAR, PNNL developed a TPBAR that has been accepted by NRC for a Lead Test Assembly (LTA) demonstration in the Watts Bar Nuclear Station. The successful engineering development and demonstration of the LTA TPBARs, in large part, contributed to the selection of the CLWR Project as the primary tritium source for the Department of Energy. PNNL's contributions to the CLWR Project include: science for the understanding of the TPBAR operation; engineering analysis and specification; limited production of prototype TPBARs; regulatory licensing and documentation; and testing to validate the design of the TPBAR and development of the extraction parameters for the TEF.

PNNL has performed, generally, in an overall Excellent manner. It has met key milestones and generated a database of information on the TPBAR design and TEF extraction processes. This database will be carried forward to the next phase of the CLWR Project as it moves out of the design and development phase into large-scale fabrication of TPBARs and completion of design and construction of the TEF.

In FY 1999, PNNL has been instrumental in development of a flowable Lithium-6 powder which will allow the upgrading of the TPBAR pellet manufacturing processes from a manual to fully automatic operation, thereby reducing manufacturing costs of the TPBARs. PNNL also completed a TPBAR Production Design based on the lessons learned from the fabrication and irradiation of TPBARs in the Watts Bar Nuclear Station. PNNL successfully completed the post-irradiation examination of the early design TPBARs that were irradiated in the Advanced Test Reactor and produced a final report of excellent quality. In the area of Extraction Modeling and Testing, PNNL delivered extraction models and parameters that enabled the TEF design to maintain progress on procurement of an extraction furnace for proof-of-principle testing. The regulatory and licensing support provided by PNNL contributed to a strong Topical Report submittal to NRC as well as a comprehensive commitment tracking system on issues identified in the NRC Safety Evaluation Report for irradiation of TPBARs in commercial nuclear reactors.

PNNL will continue to evaluate performance of the TPBARs to verify design objectives, identify potential cost-savings for fabricating them and support the CLWR Project in fabrication design support and regulatory and licensing processes for production quantities of TPBARs in commercial reactors.

November 29, 1999

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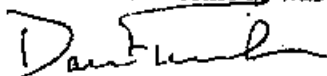
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